



Installation and Maintenance Guide

for ADA Compliance of Playground Surfacing

IPEMA
INTERNATIONAL PLAY EQUIPMENT MANUFACTURERS ASSOCIATION

The Americans with Disabilities Act (ADA) outlines regulations for new construction and maintenance of playgrounds. As of March 15, 2011, all new playgrounds and play areas should be in compliance with the Department of Justice's *2010 ADA Standards for Accessible Design*.

As a third-party product certification provider for play equipment and surfacing materials, the International Play Equipment Manufacturers Association (IPEMA) saw a need for a trusted source to outline the proper installation and maintenance for surfacing materials, to ensure compliance with these Accessibility Regulations.

Through research, consultation and collaboration with those on the frontline of the playground industry, IPEMA and the Voice of Play bring you this guide as an easy reference point concerning different surfacing types as it relates to ADA accessibility compliance.

This resource is also available online through ipema.org. Visit our social media outlets to keep up-to-date on playground and surfacing compliance, as well as news related to the play industry.





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Installation for Engineered Wood Fiber (EWF) to Meet ADA Requirements



IPEMA believes that following the installation and maintenance recommendations below will assist in greater accessibility and compliance with ADA requirements for EWF accessible surfacing under and around playground equipment including slope, change in level and clear ground floor space requirements. To meet the current Department of Justice regulations of the ADA Standards for Accessible Design Section 302.1 for stable, firm, and slip-resistant surfaces, choose surfacing tested to the most recent version of ASTM 1951. This standard confirms accessibility for mobility devices. Be sure to install and maintain the surfacing materials per the manufacturer's specifications, and in compliance with ADA design requirements, and ask your manufacturer for their ASTM 1951 test report to verify compliance.

Installation:

1. Please visit the IPEMA website (www.ipema.org) to print a certificate showing that the engineered wood fiber (EWF) is IPEMA certified for ASTM F1292 (impact attenuation within the use zone of the playground equipment) and ASTM F2075 (sieve analysis, tramp metals and hazardous metals).
2. Prepare the site in accordance with the project engineer's directions and project specifications.
3. Install drainage as recommended by the manufacturer of the engineered wood fiber. Drainage installation is recommended to increase the life of the EWF, reduce mold and fungus issues and help retain resiliency during cold temperatures. Different drainage systems are available.
4. Installing one or more ADA-compliant ramps into the play area is recommended to provide an accessible entrance to and from the play area.
5. Once drainage is installed, proceed with installing the EWF at the recommended thickness per the equipment manufacturer's specifications. Be sure the surface is level and compacted.

Optional:

To speed up the natural compaction process, once drainage is installed, install the EWF in 6 – 8" layers. Rake, level and wet the surface before compacting with a mechanical compactor after each layer is installed. Change direction 90 degrees between each layer. Repeat these steps until the desired surface thickness is achieved.

6. In kick out areas, such as swings and slides, install wear mats on top of the EWF to prevent holes and to maintain a level surface. Be sure the mats are installed so that no edge extends above the surface, which could create an accessibility issue. Tapered edges are recommended.

Maintenance for Engineered Wood Fiber (EWF) to Meet ADA Requirements

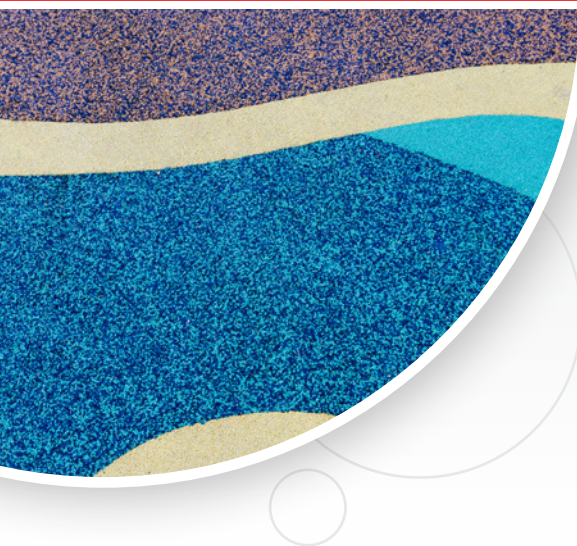
Maintenance:

Maintaining your EWF surface is critical to keeping your surfacing ADA compliant. The frequency of the maintenance information below should be conducted in accordance with the manufacturer's recommendations.

1. Visually inspect the entire playground area routinely based upon level of use. Remove all foreign material (i.e. trash, tree branches, etc.).
2. Rake the EWF to keep the surface level and the thickness at the original recommended depth. A level surface is necessary for wheelchair access and compliance with ADA requirements. Wear mats can reduce or eliminate the need to rake the EWF in high traffic areas such as swings and slide exits. Be sure the transition between the wear mats and the EWF is level.
3. At accessible entrances onto the playground surface, ensure that the surface material, accessible route or the top of the access ramp is within 1/4 inch of the top of the play area border. An ADA-compliant access ramp into the play area will help reduce maintenance in this area.
4. In the highest use areas and around equipment footers, dig down to the subsurface or drain system and measure the depth of the EWF. Ensure that the depth is sufficient for the fall height of the structure or at least at the manufacturer's original recommended depth, whichever is greater. Add EWF as necessary, level, wet and compact. The use of markings on the play structure supports or on the containment barriers is also recommended as a means to ensure the depth of the surface is kept to its original thickness.
5. Visually inspect all wear mats for tears, cracks and general wear. Add EWF around the wear mat to ensure a smooth transition from wear mat to surface. Turn wear mats over periodically and add EWF beneath them to bring wear mats up to their original grade.
6. Check the performance of the drain system by ensuring that water is flowing from a drain system outflow pipe immediately after rain. Also, make sure there is no standing water on the playground surface. It is important to have a functioning drainage system to improve the EWF life expectancy and the resilience of the surfacing.



Installation for Poured In Place (PIP) to Meet ADA Requirements



IPEMA believes that following the installation and maintenance recommendations below will assist in greater accessibility and compliance with ADA requirements for Poured In Place (PIP) accessible surfacing under and around playground equipment including slope, change in level and clear ground floor space requirements. To meet the current Department of Justice regulations of the ADA Standards for Accessible Design Section 302.1 for stable, firm, and slip-resistant surfaces, choose surfacing tested to the most recent version of ASTM F1951. This standard confirms accessibility for mobility devices. Be sure to install and maintain the surfacing materials per the manufacturer's specifications, and in compliance with ADA design requirements, and ask your manufacturer for their ASTM F1951 test reports to verify compliance.

Installation:

1. Please visit the IPEMA website (www.ipema.org) to print a certificate showing the poured in place is IPEMA certified for ASTM F1292 for impact attenuation within the use zone of the playground equipment and ASTM 1951 throughout required areas of the play environment.
2. The playground equipment manufacturer or designer must identify the ground-level accessible routes to and within the play area. Ground-level accessible routes must have a clear width of at least 60 inches in most cases, a vertical clear height of 80 inches and surfacing must be accessible (according to the Department of Justice *2010 ADA Standards for Accessible Design* at the time of this publication). Other requirements for the layout of the playground to meet *2010 ADA Standards for Accessible Design* are detailed and should be designated by the playground equipment manufacturer or designer prior to installation.
3. Install and prepare the sub-base with adequate drainage for the poured in place surfacing in accordance with the project engineer's directions and project specifications. In cases of a compacted stone/aggregate sub-base, correct compaction is required. Request documentation indicating the degree of compaction (usually measured as a percentage) and confirm that the compaction meets the PIP manufacturer's recommendation. The grade of the completed sub-base must be in compliance with the project specifications. In most cases, the installation of the poured in place surfacing will follow the slope of the sub-base, so subgrade slope accuracy is critical for compliant accessibility of the finished surface.
4. Prior to installation of the rubber surface, request documentation identifying the ground-level accessible routes and written confirmation that the subgrade meets this criteria. A diagram with elevations or identified slopes should be provided. In addition to obtaining written documentation, check the grade of the subsurface throughout the play environment using a six foot laser level.

5. When installing the poured in place rubber, the installer continually checks the grade of the installation and records with photos.
6. Ensure edging and transitions to adjacent surfaces do not inhibit accessibility. Transitions between surfaces are usually accomplished by tapering the poured in place under the grade of the other surface or “turning

down” the PIP to appear flush with the other surface. If adjacent surfaces include Engineered Wood Fiber or other loose fill material, ensure the material is installed to avoid a ramp or step that does not meet ADA Standards. Check all transitions to ensure there are no openings greater than 1/2 inch (per the *2010 ADA Standards for Accessible Design*).

Maintenance for Poured In Place (PIP) to Meet ADA Requirements

Maintenance:

Maintaining your PIP surface is critical to keeping your surfacing ADA compliant. The frequency of the maintenance procedures below should be conducted in accordance with the manufacturers’ recommendations.

1. Visually inspect the entire playground area routinely based upon level of use. Remove all foreign material (i.e. trash, tree branches, etc.). Use a vacuum or blower to remove fine particle debris. For spills or stains, request a recommendation from the poured in place manufacturer of which cleaning products, agents, or techniques to use. Some cleaning products, agents, or techniques can damage the surface.
2. During the life of the surfacing, repair and/or preventative maintenance may be required. Repairs and/or preventative maintenance can include roll coating, surface patching, re-topping or other techniques recommended by the PIP manufacturer. These repairs help ensure ADA accessibility over the life of the surface by correcting or preventing unevenness or fissures from cracking, holes, or torn out areas of the poured in place. Vandalism or other causes may create these conditions.
3. If re-topping is required, ensure the playground equipment maintains a proper height above finished grade when additional surfacing material is added. Specifically measure heights of transfer points, stairs, slide exits, clearance under rotating equipment, etc.



Installation for Rubber Mulch to Meet ADA Requirements



IPEMA believes that following the installation and maintenance recommendations below will assist in greater accessibility and compliance with ADA requirements for Rubber Mulch accessible surfacing under and around playground equipment including slope, change in level and clear ground floor space requirements. To meet the current Department of Justice regulations of the ADA Standards for Accessible Design Section 302.1 for stable, firm, and slip-resistant surfaces, choose surfacing tested to the most recent version of ASTM F1951. This standard confirms accessibility for mobility devices. Be sure to install and maintain the surfacing materials per the manufacturer's specifications, and in compliance with ADA design requirements, and ask your manufacturer for their ASTM F1951 test report to verify compliance.

Installation:

1. Please visit the IPEMA website (www.ipema.org) to print a certificate showing the rubber mulch is IPEMA certified for ASTM F1292 for impact attenuation within the use zone of the playground equipment. Also print a certificate showing that the rubber mulch you are installing is certified to ASTM F3012 for loose-fill rubber mulch.
2. Prepare the site in accordance with the manufacturer's installation instructions.
3. Install drainage, if needed, as directed by the manufacturer of the rubber mulch.
4. Install borders with accessible entry points around the perimeter of the area to contain the rubber mulch.
5. Install the rubber mulch at the recommended thickness per the equipment manufacturer's recommendations. Be sure the surface is level & compacted.

Optional:

To expedite the compaction process, install the rubber mulch in layers, 2 to 3 inches at a time. Rake and level the surface before compacting with a mechanical compactor or sod roller after each layer is installed. Change the direction 90 degrees between each layer. Repeat these steps until the desired surface thickness is achieved.

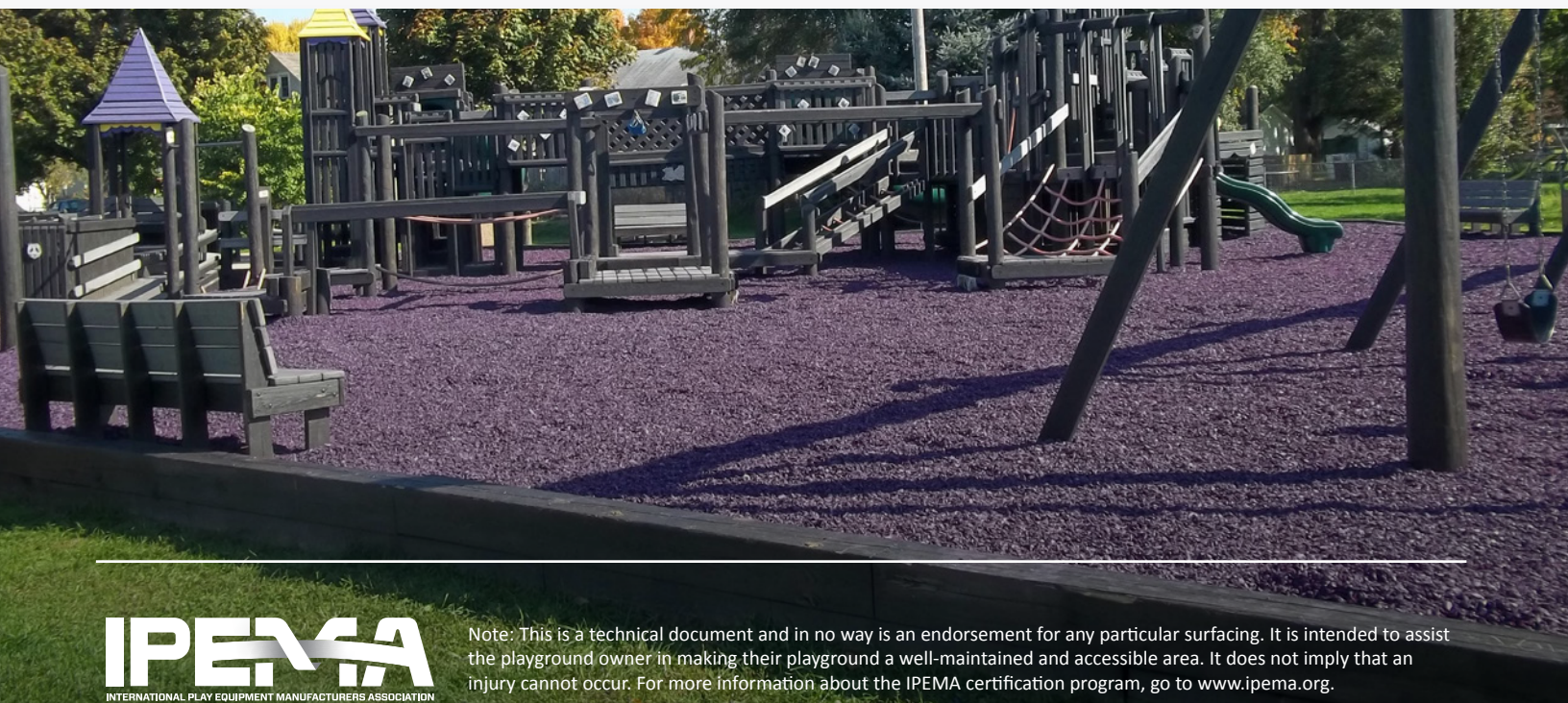
6. In kick-out areas, such as swings and slides, install wear mats to maintain a level surface and to ensure the recommended depth of product is installed for impact attenuation. Be sure these mats are installed so they do not have an edge above the surface that will create an accessibility issue. Tapered edges are recommended.

Maintenance for Rubber Mulch to Meet ADA Requirements

Maintenance:

Maintaining your rubber mulch surface is critical to keeping your surfacing ADA compliant. The frequency of the maintenance information below should be conducted in accordance with the manufacturers' recommendations.

1. Visually inspect the entire playground area. Remove all foreign material (i.e. trash, tree branches, etc.).
2. Rake the rubber mulch to keep the surface level and the thickness to the original recommended depth for impact attenuation. A level surface is necessary for wheelchair access and compliance with ADA requirements. Wear mats can reduce or eliminate the need to rake the rubber mulch in high traffic or kick-out areas such as under swings and at slide exits. Be sure the transition between the wear mats and the rubber mulch is level.
3. At accessible entrances onto the playground surface, ensure that the surface material is within 1/4 inch of the top of the play area border. An ADA compliant access ramp into the play area will help reduce maintenance in this area.
4. In the highest use areas and around equipment footers, dig down to the subsurface or drain system and measure the depth of the rubber mulch. Ensure that the depth is sufficient for the fall height of the structure or at the manufacturer's original recommended depth, whichever one is greater. Add rubber mulch as necessary, level and compact. The use of markings on the play structure supports or on the containment barriers is recommended to ensure the depth of the surface is kept to the recommended thickness.
5. Visually inspect all wear mats for tears, cracks and general wear. Add rubber mulch around the wear mats to ensure a smooth transition from the wear mats to the safety surface. Turn wear mats over periodically and add rubber mulch beneath them to bring wear mats up to original grade.
6. Make sure there is no standing water on the playground surface. It is important to have a functioning drainage system to maintain both ADA compliance and impact attenuation.



Installation for Interlocking Tile to Meet ADA Requirements



IPEMA believes that following the installation and maintenance recommendations below will assist in greater accessibility and compliance with ADA requirements for Interlocking Tile accessible surfacing under and around playground equipment including slope, change in level and clear ground floor space requirements. To meet the current Department of Justice regulations of the ADA Standards for Accessible Design Section 302.1 for stable, firm, and slip-resistant surfaces, choose surfacing tested to the most recent version of ASTM F1951. This standard confirms accessibility for mobility devices. Be sure to install and maintain the surfacing material per the manufacturer's specifications, and in compliance with ADA design requirements, and ask your manufacturer for their ASTM F1951 test report to verify compliance.

Installation:

1. Please visit the IPEMA website (www.ipema.org) to print a certificate showing the interlocking tile is IPEMA certified for ASTM F1292 for impact attenuation within the use zone of the playground equipment.
2. Prepare the site in accordance with the manufacturer's specifications. (If the manufacturer's specifications are not followed, the warranty may become an issue.)
3. Install drainage, if needed, as detailed by the manufacturer of the tile. If installation site is elevated, then additional storm water management may not be necessary. It is important that the sub-surface be sloped approximately 1 to 1.5 percent toward the water collection drains, but should never exceed 2 percent.
4. Choose suitable sub-surface (properly cured and installed concrete, properly aged and prepared asphalt or properly leveled and compacted sub-base) and prep sub-surface, making sure it is clean, dry and free of oils. Sub-surface preparation is a critical step towards a long-term successful installation.
5. Prior to installation, work with the manufacturer to assure correct non-encroachment zones, fall heights and fall zone clearances. This is important information for selecting and installing correct tile impact attenuation properties.
6. Review adhesive process, taking note of optimal temperatures, and application procedures. Follow the manufacturer's installation instructions.
7. Follow manufacturer's specific instructions for tile application, including tile-to-tile adhesion, and install the tile surface. Installers should be aware of ASTM F3313 for field testing and a test should be performed as a quality check to ensure the correct thickness is suitable.



Maintenance for Interlocking Tile to Meet ADA Requirements

Maintenance:

Like any surface, a good routine maintenance program will enhance the longevity and appearance of a interlocking tile surface.

Routine Maintenance:

1. Blowing/sweeping: using a leaf blower is the best way to remove any loose debris from tile surface and seams of connecting tile. Not all play areas will accommodate a leaf blower. Sweeping the surface is also acceptable, however, it is difficult to remove all contaminants by sweeping alone. Sweeping is okay with a non-porous surface, but should never be used with porous surfaces as it pushes down loose-fill products.
2. Vacuum: periodic vacuuming is recommended in areas where sand, dirt, crushed twigs, etc. is frequently tracked onto the surface.
3. Water hose: use a water hose with a pressure spray tip to remove contaminants from porous top surface.
4. Cleaning agents: Interlocking tile can typically accommodate moderate use of most household or bio-degradable detergent that contain both odor suppressants and disinfectants. These products can also remove dirt, mold and dust. Dilute this cleaning agent as recommended by the manufacturer. Be aware that some detergents can cause the surface to become slippery.



Advanced Maintenance:

Depending on frequency of use, tile will occasionally need a deeper clean to remove accumulated dirt and stains.

5. Steam vacuum: a steam vacuum with or without cleaning agents is ideal for advanced cleaning and maintenance. Be aware that it can also remove debris that is in the top portion of porous products or in seams.
6. Power washing: in areas that can accommodate power washing, use a power washer with a wand tip. Take care as power washers can shred rubber surfaces.

Installation For Artificial Turf to Meet Ada Requirements



IPEMA believes that following the installation and maintenance recommendations below will assist in greater accessibility and compliance with ADA requirements for Artificial Turf accessible surfacing under and around playground equipment including slope, change in level and clear ground floor space requirements. To meet the current Department of Justice regulations of the ADA Standards for Accessible Design Section 302.1 for stable, firm, and slip-resistant surfaces, choose surfacing tested to the most recent version of ASTM F1951. This standard confirms accessibility for mobility devices. Be sure to install and maintain the surfacing materials per the manufacturer's specifications, and in compliance with ADA design requirements, and ask your manufacturer for their ASTM F1951 test report to verify compliance.

Installation:

1. Please visit the IPEMA website (www.ipema.org) to print a certificate showing the turf product you are purchasing is certified per ASTM F1292 for impact attenuation within the use zone of a playground.
2. Prepare the site in accordance with the project engineer's directions and project specifications
3. Install borders as necessary if recommended by installation specifications.
4. Install a drainage layer per the manufacturer's recommendations. If gravel is used, compact for a level sub-surface. A drainage layer helps to extend the life of the turf and keep it resilient during colder months.
5. If recommended by the turf manufacturer, install impact attenuating sub-base over the drainage base. This could be foam panels or rubber buffings for example.
6. Install turf layer. This should be installed per the manufacturer's instructions and by a qualified turf installer ensuring no open seams are left that can become trip hazards.
7. Stretch and anchor turf around borders as recommended.
8. If the turf system requires it, install infill as recommended by turf manufacturer. This could be rubber granular, synthetic infill, various types of sand or a combination of infill materials.

Maintenance for Artificial Turf to Meet ADA Requirements

Maintenance:

1. Keep surface clean by blowing, sweeping or hosing off loose dirt and foreign material.
2. Use a stiff broom to brush fibers to keep fibers upright and infill from compacting. Keeping fibers upright will extend the life of the turf. Sweeping the infill layer will keep the infill from compacting, which could affect the resiliency of the surface. Add infill as necessary, paying close attention to high use areas such as swings and slides.
3. If spills occur, blot with a clean towel and clean area with mild detergent, followed by flushing area with clean water. If turf contains infill, use a vacuum to suck the infill out of the area before cleaning. Replace infill as needed.
4. If turf area is used for pets, there are infill products that absorb urine odor. Ask your turf manufacturer for availability.
5. Inspect seams for separation as well as around the border of the play area to ensure that the turf remains properly anchored. Catching these problems early can eliminate major problems down the road.
6. There may be other maintenance required by your turf manufacturer so ask for a maintenance document from the supplier/installer. Proper maintenance will give you a long lasting surface!





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This is a technical document and in no way is an endorsement for any particular surfacing. It is intended to assist the playground owner in making their playground a well-maintained and accessible area. It does not imply that an injury cannot occur. For more information about the IPEMA certification program, go to www.ipema.org.