

# Playground

## Inspection & Maintenance Guide



# About the Authors



## **Teresa B. Hendy, CPSI**

President, Site Masters, Inc.

Teresa (Teri) is the President and owner of Site Masters Inc., a Cincinnati, Ohio based consulting firm specializing in the design and safety of children's play environments. For more than 30 years, Teri has been actively involved as a design and safety consultant to the school, child care, and park and recreation industries as well as to private foundations, science centers, museums, and national quick serve restaurants.

Teri brings extensive knowledge of the standards and guidelines that apply to the playground industry as she has actively worked with the ASTM subcommittees since 1987 to develop industry standards. Teri is on the Voice of Play Advisory Board to IPEMA and an executive board member and instructor for the curriculum committee for the National Playground Safety Institute. She is a nationally recognized author, speaker, and expert in the area of playground safety and design.

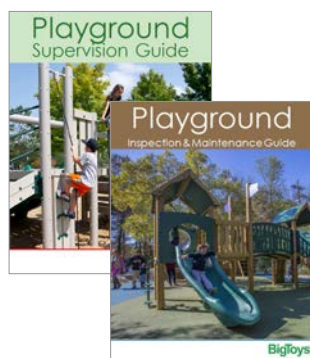


## **Daniel M. Hendy, CPSI**

Site Masters, Inc.

Dan has over three decades of experience in the recreation industry working with early childhood centers, government, municipalities, and schools. Having previously owned and operated a sales and construction company, Dan possesses extensive knowledge and experience in managing the construction and design of playground facilities as well as the manufacturing and fabrication of playground equipment and site furnishings. Dan has experience in facilitating the design and construction of playgrounds to meet the developmental needs of the children and users of the play spaces. His background in education and teaching has enabled him to develop programming to meet the goals of owners, designers, and builders of play facilities. Dan has facilitated many local landmark projects: Highfield Gardens, Evendale Recreation Center Playground, Juilfs Park, Bicentennial Commons Playground Addition, Ziegler Park, Crescent Park Playground.

Dan has a Masters in Education, holds a US patent, is a Certified Playground Safety Inspector, and after 30 years in the playground industry, has joined Site Masters Inc. as a partner in the firm.



This Guide is a part of the Safety Resource Series and is provided as a public service by BigToys. The Safety Resource Series is made up of the Playground Inspection and Maintenance Guide and the Playground Supervision Guide. For more information about the Series or to request digital copies of the Guides, please visit [bigtoys.com/about/resources/supervision-and-maintenance-guides](http://bigtoys.com/about/resources/supervision-and-maintenance-guides)

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## **Disclaimer**

The purpose of this overview resource is to raise awareness about some considerations for a routine playground inspection and maintenance program; it is not to be considered as an all inclusive guide. Do not rely upon this overview in lieu of the normal safety inspections that might otherwise be conducted. Please refer to the manufacturer specifications and warnings, which are supplied with the playground equipment, and continue with normal inspections. Please do not construe our failure to either itemize any particular maintenance activity or list any particular condition as a statement that these activities are unneeded or that these conditions do not require attention. PlayCore and its divisions volunteer these comments in the interest of safety while advising of the restricted context in which they are given.

# Playground Inspection & Maintenance Guide

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# Why is Inspection and Maintenance Important?

Well-maintained playground equipment can help children to develop cognitively, physically, communicatively, socially, and emotionally in a safer environment. Along with helping to promote children's development, a quality inspection and maintenance program has many positive outcomes.

## Protect your investment

Play equipment, protective surfacing, planning, and site development of a playground are significant investments. It simply makes good economic sense to maintain the equipment to extend its life and protect your school or agency's investment.

## Manage risk

Proper, routine, and timely maintenance is a way of managing risks in the community's play areas, helping to protect them from costly accidents, and demonstrating the community's standard of care.

## Improve children's play experiences

When playground equipment is broken or otherwise unusable, children miss opportunities for play. That moment of connection with others and fun-filled learning might be lost. The better maintained the equipment, the better the chance that a child's life is improved. Your work could make the difference!

## Promote community values

Maintained and groomed play environments are a source of pride for the community. Taking good care of the playground equipment and maintaining a beautiful environment is an expression of your community's values.

## Control expenses

Timely, preventive routine maintenance procedures help control expenses by reducing upkeep and replacement costs, enabling more accurate budgeting.

## Learning Outcomes:

- Define the importance of maintenance as a key to maximizing playground value and managing risk.
- Generate high and low frequency inspection protocols and procedures for a sustainable maintenance program.
- Identify potentially hazardous conditions in the play environment and define proper maintenance practices for playground equipment and surfacing.
- Summarize a variety of tools and generate a maintenance program unique to your school or agency.

By identifying and eliminating hazardous conditions, you can play an important role in preserving the play environment, promoting the value of play, and protecting children.




## Did You Know?

It has been estimated that at least **33%** of playground accidents could be avoided with a planned maintenance program. (National Recreation and Park Association's CPSI Course).

# Management and Staffing Priorities

When designing a playground maintenance program, managers should consider, among other factors, these concepts:

**Inspections should be routine, timely, and followed up with action.**

 *Design the program to be consistent with the manufacturer's instructions when available and take into account environmental conditions.*

**Have a system in place that ensures an appropriate response to hazards.**

- A hazard is anything that may cause harm or result in serious injury. Serious hazards should be immediately repaired, removed, or taken out of service.
- The play environment is constantly changing; your system should be capable of responding in an ongoing manner.

**A successful program requires comprehensive commitment.**

- Everyone associated with the playground, from the manufacturer to the citizen, has a role in providing access to safer and age appropriate play.

**Continually educate staff in these and other areas.**

- How to effectively identify problems and repair play equipment.
- How to provide ongoing maintenance.
- How to keep records and documentation of work.

**When necessary, bring in outside vendors to perform inspections and/or do technical repairs.**

- Contact your playground supplier for recommendations.

**Practice complete documentation.**

- Complete records of maintenance and repairs are essential for a sound maintenance program and risk control. Providing documented evidence that maintenance is being performed verifies a standard of care as set forth by the operator and creates a historical record that could be useful.
- Warranties are honored when there is proof of maintenance.



# Maintenance Inspection - Frequency and Process

Because play equipment and surfacing are subject to changes from use, abuse, and climate, they must be inspected on a regular basis. The frequency of inspection will be determined by many factors including equipment age, use, and materials, and external factors like the age of the users, climate, and vandalism. Regardless of site-specific attributes of the playground, two types of inspections should be performed on all playgrounds: low frequency and high frequency.

## Low Frequency Inspections

Often performed quarterly or semi-annually, low frequency inspections are in-depth investigations of the equipment and surfacing looking for wear and tear. This inspection requires a staff member with mechanical knowledge and extensive knowledge about play equipment and surfacing standards. During or immediately after the inspection, staff should do preventive maintenance and repairs and/or remove damaged equipment to remedy problems discovered in the inspection. An example of this type of maintenance would be replacing heavily worn chains that were noted during the inspection. See pages 25-26 for a sample inspection form and corresponding codes to use on the form.

## High Frequency Inspections

Often performed daily or weekly, high frequency inspections look at frequently changing conditions caused by use, weather, and/or vandalism. During a high frequency inspection, staff checks and corrects playground conditions such as loose-fill surfacing depths, sanitation issues, and the presence of trash and debris. If any hazards are discovered, staff should follow school or agency procedures such as completing documentation, taking the area out of use, and/or correcting the problem. See page 29-30 for a sample inspection form and corresponding codes to use on the form.

## Playground Inspection Process

When new play equipment is installed and at the introduction of a new playground safety and maintenance program, it is good practice to have an audit of the equipment performed by a Certified Playground Safety Inspector (CPSI). The audit will note conditions that are not compliant with current industry standards and will form the basis for a systematic program of removal, repair, and/or retrofit.

## Inspection Forms

Reports detailing inspections, maintenance, and repairs need to be completed for all types of inspections and maintenance. File these reports in an accessible location because they may be invaluable for ongoing maintenance, budgeting, staffing, designing new play areas, future play equipment selection, and other purposes.

Sample low and high frequency forms are included as part of this program guide. They can be reproduced and tailored to meet the site and policy specific needs of your school or agency. Because of the variance of each play area, these forms should not be considered as comprehensive lists of playground hazards or maintenance requirements.

For a list of Certified Playground Safety Inspectors in your area or for information about becoming a CPSI, contact the National Recreation and Park Association at (800) 626-6772 or online at [www.nrpa.org/cpsi](http://www.nrpa.org/cpsi).

## LOW FREQUENCY INSPECTION GUIDE

### Important Headings for Document

- The name, location, or proper means of identifying the playground.
- The name and position of the person conducting the inspection.
- The date of the inspection.
- When multiple pages are necessary, number the additional pages and indicate the total number of pages.
- Inventory each piece of the equipment by writing its name in the “Equipment List” columns (one piece of equipment per column). Should more columns be necessary, add additional pages. Be as descriptive as possible for each piece of equipment, using characteristics such as height, color, location, number of swing seats, etc.



### Low Frequency Inspection Form Elements:

- General Safety Considerations
- Finishes & Materials Conditions
- Fasteners
- Structural Members
- Gripping & Stepping Components
- Slides
- Swings & Moving Components
- Other
- Protective Surfacing

### General Safety Considerations

This section addresses conditions that apply to every piece and type of playground equipment. Should you have any concerns regarding whether or not a hazard exists, mark the box with an “O” to indicate an outstanding issue and consult with a CPSI and/or the manufacturer of the equipment.



#### Check for required signs and labels

The ASTM standard requires the name of the manufacturer or custom designer to be present on the equipment. Typically, the manufacturer’s name is molded into plastic components or cast into steel pipe caps or collars.

An age recommendation sign or label must be present on or near the equipment.

Other signs and/or labels that are required:

- Warnings regarding danger of wearing sports helmets and clothing with drawstrings, which can become strangulation hazards when worn on equipment.
- Hot surface warning when applicable.
- Surfacing warning when applicable.
- Recommendation for adult supervision.



Demonstration of test for crush and shear hazard.

#### Check for crush and shear hazards

Such hazards may crush a child’s finger or cause amputation. Crush and shear points can occur on components that are in motion like see-saws and moving bridge planks. To check for a crush or shear hazard, place a 5/8 inch diameter dowel in the opening. If the component could close down on the dowel, then a crush or shear hazard is present. Lightweight objects such as tic-tac-toe game pieces are not considered for crush and shear.



*Should you have any concerns regarding crush and shear hazards, mark the box with an “O” for outstanding issue, and consult with a CPSI and/or the manufacturer of the equipment.*




Projection gauges are part of an inspection tool kit that is available for purchase.

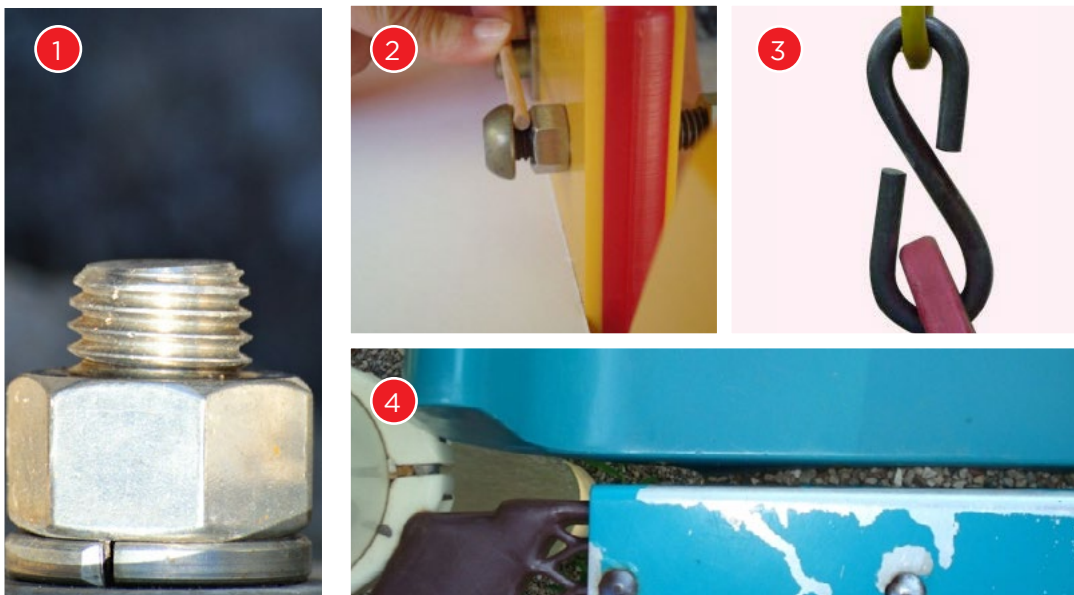
To order, contact your local playground representative or email [info@bigtoys.com](mailto:info@bigtoys.com)

### Check for entanglement and protrusion hazards

Typically caused by hardware or small diameter components that project out from a surface, entanglement and protrusion hazards may entangle clothing resulting in strangulation and/or impale skin causing a laceration, contusion, or other soft tissue damage. Projection gauges should be used to check for entanglement and protrusion hazards. Projection gauges are part of an inspection tool kit that is available for purchase from your playground manufacturer and the National Recreation and Park

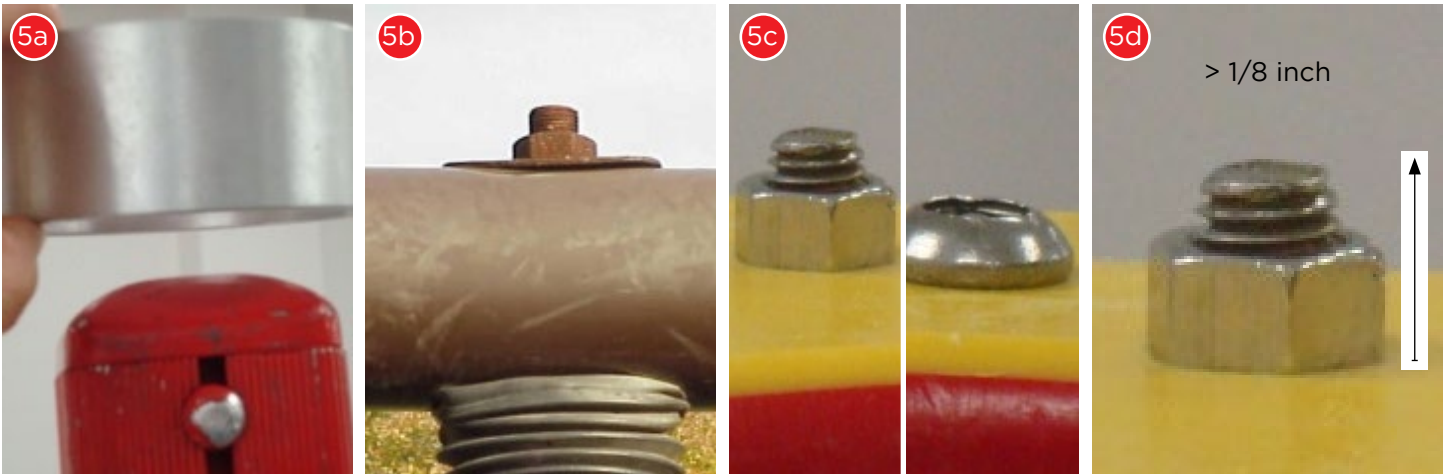
Association (NRPA). It is possible to fabricate your own gauges using the dimensions outlined in the Consumer Product Safety Commission's Handbook for Public Playground Safety, publication #325, available for free at [www.cpsc.gov](http://www.cpsc.gov).

 *Should you have any concerns regarding entanglements and protrusions, mark the box with an "O" for outstanding issue and consult with a CPSI and/or the manufacturer of the equipment.*



### Check for entanglement hazards

1. Check that there are no more than two threads exposed on a bolt end. In Photo 1, more than two threads are exposed, so this bolt would be considered an entanglement hazard.
2. Check that hardware does not increase in diameter from the initial surface out of which it projects, creating a hook, as seen in Photo 2. If a 1/8" diameter rod can be inserted fully into the space between the projection and the initial surface then the projection is considered an entanglement hazard.
3. Check that the gaps in an "S" hook are not greater than .04 inches (approximate thickness of a dime).
4. Check that there are no gaps at the entrance to a slide at the point of attachment of the slide to the platform, as seen in Photo 4. If a gap is present, it must be considered for entanglement. Since there is no standard test method, use your best judgment to determine if a drawstring on a child's coat or outerwear could become entangled in the gap. If in doubt, photograph the gap and contact the manufacturer.



5. Check that hardware and small components do not project vertically above a horizontal unless the projection is less than 1/8 of an inch or it is rounded. In order for a piece of hardware or small component to be considered a vertical entanglement hazard, **all** of the following conditions must exist:

- a) The projection would fit inside a three inch diameter ring, as seen in Photo 5a.
- b) The projection projects vertically above a horizontal and is perpendicular to the surface it comes out of (90 degrees), as seen in Photo 5b. If the component projects out horizontally

or below horizontal it is not considered for entanglement unless the projection is on the sidewall of a slide.

- c) The projection is not rounded. In Photo 5c, the projection on the left has perpendicular sides and must be considered for entanglement. The projection on the right, however, is rounded and, therefore, is not considered a vertical entanglement hazard.
- d) The perpendicular portion of the projection is taller than 1/8 of an inch, as seen in Photo 5d. This is an entanglement hazard.



*Gauges are used to test the compliance of all projections. This projection is in compliance because it does not extend beyond the face of the gauge.*



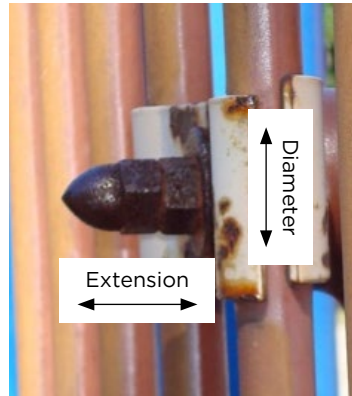
*This bolt end is an unsafe protrusion.*

## Check for protrusion hazards

1. Place each of the three gauges over all projections, regardless of shape and orientation, as seen in Photo 1.
2. If the projection extends through the gauge and projects beyond the face of the gauge, then the projection is considered a protrusion hazard and has the potential to impale a child. In Photo 2, the projection is a protrusion hazard.



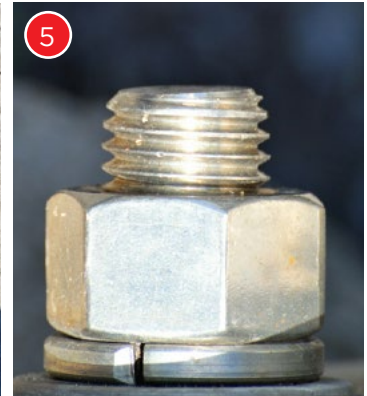
Test swings for protrusion hazards with this special gauge.



This unsafe protrusion is useful for visualizing extension and diameter measurements.



This cracked component is a hazard.



More than two threads are showing, so this component is a protrusion hazard.

3. Suspended components, such as swings, have stricter protrusion requirements because they move and may hold the added weight of a child, changing the dynamics of the hazard. On a suspended component, any projections that would fit inside a 1 ¼ inches diameter gauge may not project out more than 1/8 of an inch. (A suspended projection hazard gauge, resembling a large flat washer, is part of the protrusion gauge kit.)

When projection gauges are not available, use the following procedure to determine the presence of a protrusion hazard.

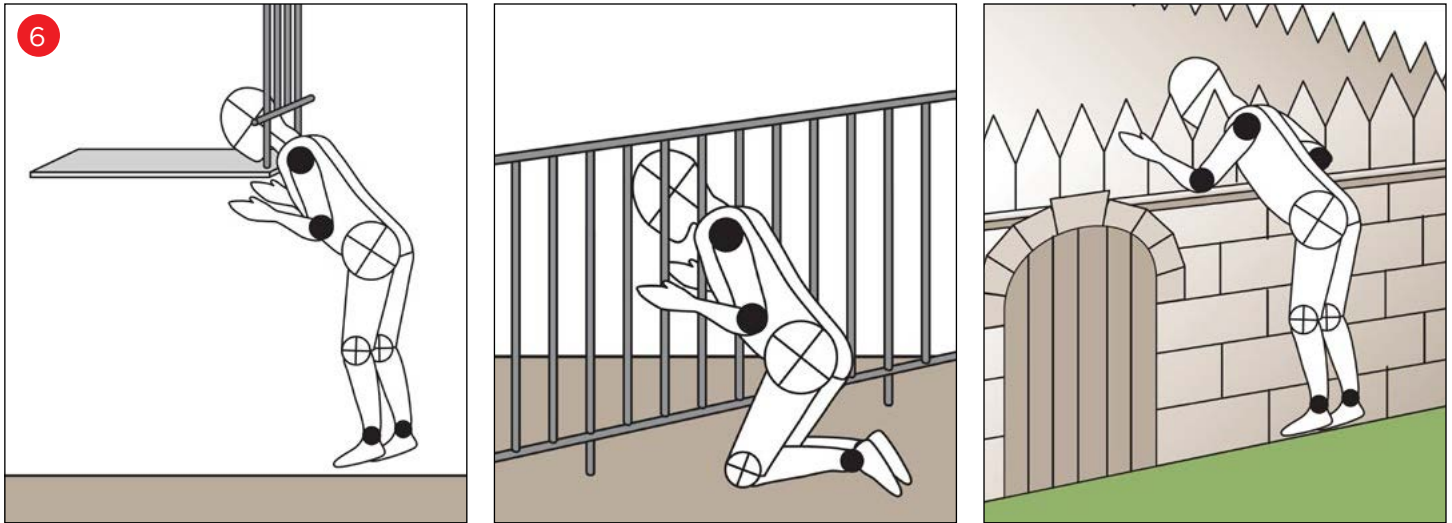
- If the diameter or maximum cross section of a projection is less than or equal to 1/2 inch, the projection should not extend more than 1/4 of an inch above the surface to which it is attached.
- If the diameter or maximum cross section of a projection is less than or equal to 1 ½ inches, the projection should not extend more than

3/4 of an inch above the surface to which it is attached.

- If the diameter or maximum cross section of a projection is less than or equal to 3 inches, the projection should not extend more than 1 ½ inches above the surface to which it is attached.
4. Check for sharp points and edges. Use your judgment to determine whether or not a point or edge could harm a child; generally, all edges should be smooth and rounded. Pay particular attention to rough edges on hardware, worn or cracked materials, splintered wood, rusted or cracked metal, and weld spatters on metal surfaces.
  5. Check that bolt ends show less than two threads and are rounded and smooth. Pay close attention to bolt ends because rough or projecting bolt ends could be entanglement and protrusion hazards.

## Quick Reference Protrusion Hazard Chart

If the diameter or maximum cross section of a projection is less than or equal to this Diameter.	The projection should not extend more than this Extension above the surface to which it is attached.
1/2 inch	1/4 inch
1 ½ inches	3/4 inch
3 inches	1 ½ inches



Areas that can possibly cause head entrapment are below a barrier, between the vertical bars of a barrier, and an angle less than 55 degrees on a fort. (Source: CPSC)

6. Check for head entrapment hazards. Head entrapment and a resulting strangulation hazard can occur when children enter an opening feet first with only their legs and torso passing through the opening. Completely bound openings that measure between 3.5 inches and 9 inches must be considered for head entrapment. If the equipment was installed correctly and audited after installation, there should not be entrapment hazards unless the equipment shifts or receives improper repairs.

Head entrapment probes and templates are available for purchase from your playground manufacturer and the NRPA as part of an

inspection tool kit. There are two probes/templates: a torso probe/template and a head probe/template. The probe is three dimensional and may be easier to use because the user does not need to measure the depth of the opening. Templates are two dimensional and may be used in place of probes as long as the user ensures that the template has entered the opening to a depth of 4 inches. It is possible to make your own templates using the dimensions outlined in the CPSC Handbook for Public Playground Safety, but when making your own templates, make certain that the final product is accurate.



Projection gauges are part of an inspection tool kit that is available for purchase.

To order, contact your local playground representative or email [info@bigtoys.com](mailto:info@bigtoys.com)



*This photo shows the use of entrapment templates as opposed to the three dimensional probes.*



*The torso probe enters the opening and therefore requires further testing.*



*The head probe does not freely enter; therefore, this tic-tac-toe panel poses a head entrapment hazard and should be corrected.*

- a) Test all completely bound openings that measure between 3.5 and 9 inches. An opening where safety surfacing is the lowest boundary is not considered a hazard and is not tested.
- b) Insert the torso probe/template into the opening as shown in the photograph. If the torso probe/template does not enter the opening, then the opening is compliant and it does not need to be checked further. If the torso probe/template goes into the opening to a depth of four inches, then the opening is considered accessible to a child and the opening must be checked using the head probe/template to determine if an entrapment hazard is present.
- c) Insert the head probe/template into any opening that allowed the torso probe/template to enter. If the head probe/template will freely pass through the opening, no head entrapment hazard is present. If the head probe will not enter and exit the opening freely, the opening is considered a head entrapment hazard. If a head entrapment hazard exists, it should be corrected immediately. The degree of severity of the hazard will be determined by the likelihood that a child can get into

the opening and the height of the opening above the ground. Higher openings where it is unlikely the entrapped child's feet will contact the ground pose a greater risk.



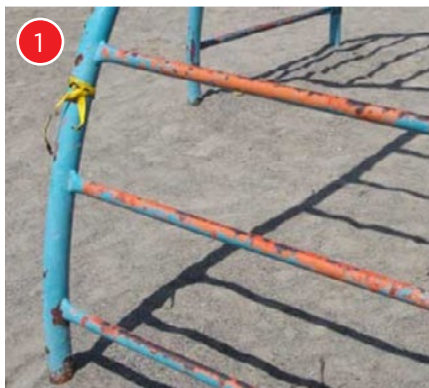
*If you are uncertain whether or not a head entrapment hazard exists, close off the opening and take the equipment out of service until a CPSI and/or the manufacturer can be contacted to evaluate.*

7. Check the cleanliness and sanitation of the play environment. Serious health hazards can be created by animal feces, bodily fluids, and bird droppings. Also, check regularly for the presence of pests, like insects and vermin, and remove them and their nests from play areas.



### Finishes and Material Conditions

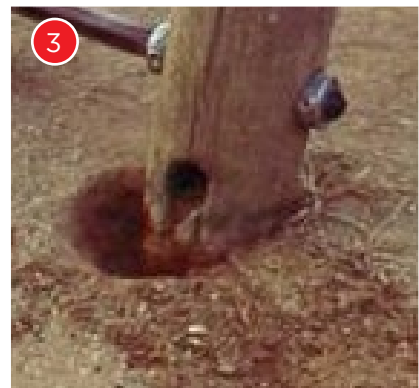
The following low frequency inspection recommendations apply to specific types of surfaces, finishes, and materials and may not apply to all components of the play equipment.



*Chipped paint on this equipment should be addressed and repainted.*



*Vandalized surfaces can be cleaned with Graffiti Remover.*



*This wooden upright post is unstable.*

1. Check that metal surfaces are free from rust and chipping paint.
  - Clean and paint all metal surfaces if rust appears. Prepare the surfaces properly before painting. Touch up paint is available for purchase from your playground manufacturer.
2. Check the conditions of all surfaces.
  - Surfaces should be free from mold and mildew as they can be health and slip hazards.
  - Equipment and surfacing should be carefully checked to remove any graffiti or vandalism. Graffiti breeds more graffiti and should be removed immediately.
3. Check that wood surfaces are free from rot, splinters, warping, and severe cracking.
  - Remove any splinters, smooth the area, and fill with caulk if necessary. If warping or rot exists, check the integrity of the wood and its anchoring point. (Hidden rot can occur where the wood member intersects the protective surface and concrete footers.)



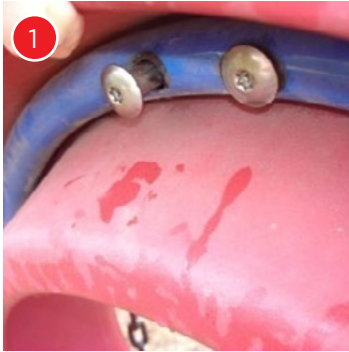
*When possible, obtain replacement wood from the manufacturer of the wooden play equipment.*



4. Check that there are no damaged, bent, broken, or missing parts.
  - Damaged, bent, broken, or missing components could compromise the integrity of the structure.
5. Check that plastic components are free from cracks, holes, and burns.
  - Damaged plastic components should be repaired, removed, or isolated. Before altering a damaged component, consult with the manufacturer of the equipment to determine if repair is possible.
6. Check that no weld joints are broken, rusting, or rough.
  - A skilled welder should make repairs within the parameters of the manufacturer and playground industry standards. Be sure to repaint the weld afterward. Touch up paint can be purchased from your playground manufacturer. Do not weld swing “S” hooks closed, as it changes the property of the metal and reduces its strength.
7. Check PVC coated components for signs of wear and peeling.
  - Frequently used to coat swing chain, platforms, and other components, PVC coatings are subject to degradation and UV breakdown and need to be checked for signs of wear and peeling. When possible, correct peeling by re-coating the component immediately because, in some cases, exposed metal may deteriorate more quickly. Plastisol, which can be used to touch up PVC coated decks and other components, can be purchased from your playground manufacturer.

### Fasteners

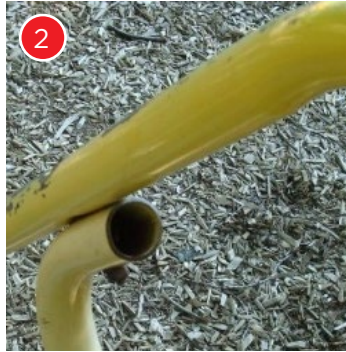
This section applies to specific types of hardware and other fasteners and may not apply to all play components on the playground.



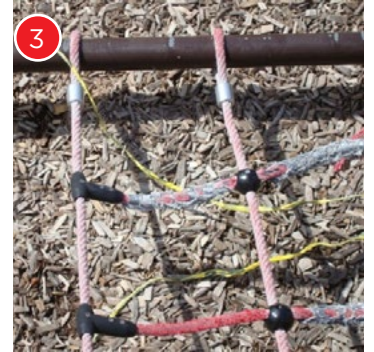
*This bolt is loose and should be tightened or replaced.*



*Hardware is missing and causing the component to come apart.*

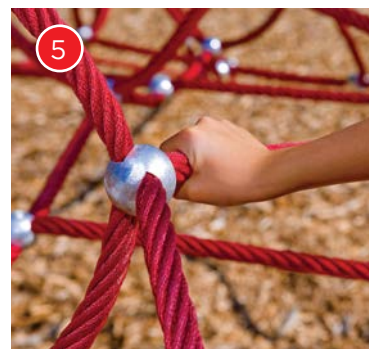
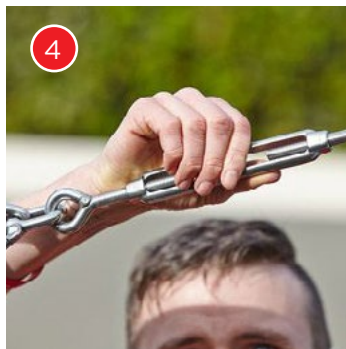


*The cap is missing and should be replaced.*



*Worn ropes and an exposed anchoring device make this component unsafe.*

1. Check that all hardware is present, tight, and fully engaged.
  - Physically check hardware to confirm that it is tight. Most manufacturers utilize self locking bolts or lock-tite, but intensive use of the equipment can cause bolts to loosen. If non-moving equipment moves, the hardware may be missing or not fully engaged.
2. Check that caps and plugs are present on the ends of all pipes and tubes.
  - Exposed tubing and pipe must have capped ends. Caps cover sharp edges, prevent insect infestation, and protect the metal from freeze cycles. The caps should be rounded, securely fastened, and should not create an entanglement or protrusion hazard.
3. Check that all fittings and bearings are functional, lubricated, and squeak free.
  - Fittings and bearings should be in good condition, not showing excessive signs of wear. Lubricate during inspection to prolong the life of the component. Replace fittings and bearings that are in poor condition, showing excessive signs of wear.
4. Check that turnbuckles are fully engaged and properly adjusted.
  - Used to keep components such as climbing nets taut, turnbuckles may loosen over time.
  - Adjust turnbuckle tension as required.
5. Check that all cables and ropes are securely fastened.
  - Cables and ropes must be securely anchored and not capable of looping back on themselves. Check to make certain that cables and ropes are in good condition and not unraveling or coming apart.



## Structural Members

This section applies to the structural integrity of the playground and applies to all types of components.



1. Check to make certain that all footings and other forms of anchoring devices are stable and are not exposed.
  - Concrete footings and other anchoring devices should be installed below the level of the protective surfacing material. If there are exposed footings, the play area should be taken out of service, and they should be corrected as soon as possible.
2. Check to make certain that structural members are sound and securely fastened.
  - Structural members, such as upright support posts, horizontal beams, and platforms, must be sound and securely fastened, fasteners being tight and secure, with no unintended movement. When a component shifts, head entrapment hazards may be created.
3. Check that springs and rocking components are in good repair.
  - Coil springs and other types of rocking components are subject to heavy use. For this reason, they may crack or wear out and become loose from their anchoring devices. It is important to check the points of attachment to the footing and to the body of the spring rider.
  - Check the springs and rocking components for loose or missing hardware and for signs of cracking or degradation.

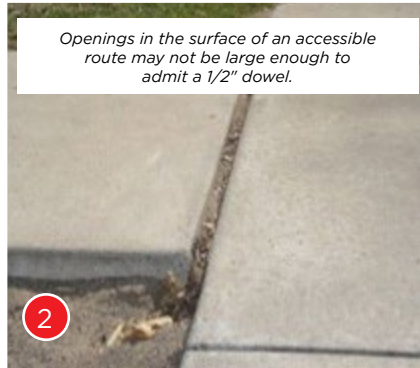
## Gripping and Stepping Components

1. Check that all handholds/grips are tight, in good condition, and do not rotate.
  - Unexpected movement of a handhold could cause a child to fall.
2. Check that all stepping surfaces are level, stable, and clean.
  - Stepping surfaces that are not level and stable may create a trip hazard. Stairs, platforms, and other types of access devices should not have abrupt changes of level.
  - All surfaces should be kept clean and free of debris. Platforms should drain well.
3. Check that all foot rungs/holds are tight, secure, and in good condition.
  - Surfaces intended for wheelchair use should not have a vertical change of elevation greater than 1/2 inch and may not have a horizontal gap or space greater than 1/2 inch.
  - If a foot hold is not intended to move, it should not move. Make certain that components such as stepping pods and balance beams are level and secure.
  - Excessive wear on a stepping component may impact the integrity of the component and also create a tripping hazard, especially if the surface is separating, such as when a pipe splits.

*All handholds/grips must be kept in good condition.*

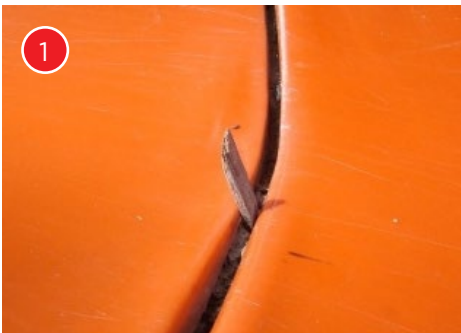


*Openings in the surface of an accessible route may not be large enough to admit a 1/2" dowel.*



*Be sure all stepping components are tight, secure, and in good condition.*

## Slides



*This debris could pose a hazard.*



*This tear could be an entanglement hazard.*


1. Check all slides to make certain that the bedways and side walls are smooth and free from debris.
  - Look for smoothness, and note excessively worn slide parts.
  - Look for foreign objects caught in the spaces between sections of the slide, as seen in Photo 1.
2. Check the slide bedway and the attachment point of the slide to the platform for conditions that might entangle clothing or body parts.
  - The slide bedway must be free from entanglement hazards, as noted in the entanglement section. Clothing entanglement can occur when the bedway separates from the platform creating a gap large enough to allow draw strings or clothing to enter the gap. Entanglement may also occur when sections of the bedway separate or when the component is cracked or damaged.



*If you are unsure of the entanglement potential, mark an “O” for outstanding issue on the inspection form and take the equipment out of service until the issue is resolved.*

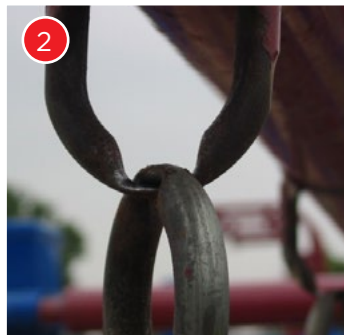
## Swings and Moving Components

1. Check that swing chains or cables are not twisted and are free from excessive wear.
  - Check the links of the chain from top to bottom for kinks or wear, paying special attention to the links at the top of the chain and at the swing seat connection.
  - Unwrap swing chains if they are wrapped around the top rail of the swing structure, checking for deep wear.
2. Check “S” Hooks and other types of fasteners for excessive wear and to make certain that they are closed.
  - Check frequently that “S” hooks are not worn more than 1/4 of their thickness, as seen in Photo 2. Always replace them with “S” hooks from a playground equipment vendor. Never reuse an “S” hook. Once it is closed and re-opened, its strength has been compromised.
  - All fasteners should be closed so that the opening is less than .04” as measured with an automotive feeler gauge. For perspective, a U.S. dime is approximately .04” thick. Never weld an “S” hook closed.
3. Check that all swing hangers are free from excessive wear and that the bushings are lubricated and in good condition.
  - Swing hangers and bushings should be checked frequently for signs of excessive wear. Because bushings are designed to wear out so that the cast swing hanger does not, make certain that the component that supports the swing chain has a bushing, bearings, or some other means of reducing the friction yet moves freely within the swing hanger.
  - Swing hangers should be securely fastened to the top rail so that they do not spin or rotate around the top rail unless designed to do so.
4. Check that swing seats are smooth, in good condition, and free from cuts or tears. Injuries can occur if swing seats break while in use.
  - Make certain that fasteners are not pulling through the swing seat material, the material is not cracked or torn impacting the integrity of the seat, and the edges and surfaces are rounded and smooth.
  - When a child jumps out of a swing seat while swinging, the seat may fly back into the path of a child on an adjacent swing and an exposed metal edge or rough, jagged vinyl may cut a child.

 *Purchase swing chain from a playground equipment manufacturer. Chain purchased from a hardware store can have a different hardness that is not suitable for playground use.*



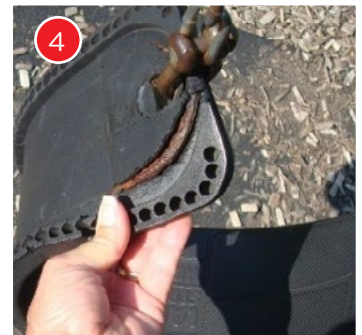
*Swing chain should be unwrapped/inspected and broken swing seat should be replaced.*



*Worn hardware poses a hazard.*



*This bushing (red) is worn and should be replaced.*



*This belt swing is tearing and should be replaced.*



*This tire is cracking and should be replaced.*



*Ensure tire swing assemblies remain properly greased and in good condition.*



*It is important to check moving components frequently to ensure they are in good condition.*

5. Check that tire swing seats are lightweight, smooth and rounded, and in good condition.
  - Tire swing seats must be less than 35 pounds.
  - Check to make certain that there are no exposed steel belts or sharp or rough edges. Look at the condition of the seat where the hardware comes through the tire to make certain that the rubber or plastic is not cracking.
6. Check that tire swing assemblies, including swivels and/or bearings, remain properly greased and are in good condition.
7. Check that all other moving components are in good condition, secure, and lubricated.
  - Moving components may include, but are not limited to swing structures, track rides, trapeze ladders, trapeze rings, tire swings, upright twirling components, backhoe diggers, steering wheels, whirls/spinning rides, chain net climbers, panels with moving assemblies, spring riders, suspension bridges, pogo type bouncers, and see saws.
  - The integrity of the component and all its parts should be checked frequently and should be in good condition.
  - Moving components may come loose and should be checked frequently at the concrete footing or other anchor/attachment point.
  - Moving components should be greased or lubricated during inspection.

### Other

The “Other” section of the inspection form is an important place to add any other condition not listed above that should be noted. As an example, toys and found objects should not be brought onto the play structure, loose branches may fall into the play area. Correct and note these items in this section of the low frequency inspection form.

### Protective Surfacing - Loose-fill and Unitary

All playground equipment must have proper impact attenuating (protective) surfacing under and around it. Unacceptable playground surfaces include grass, packed earth, asphalt or concrete, and other hard surfaces. Acceptable surfacing materials fall into two categories: loose-fill and unitary surfacing. Your budget, the amount of use the playground gets, your ability to maintain the surface, and other factors will help facilitate playground surfacing selections.

Although it cannot eliminate all injuries, well-maintained protective surfacing should be capable of absorbing some of the impact from a falling body. For this reason, your role in maintaining the surfacing is essential.

Consumer Product Safety Commission Documentation of Surfacing: *Materials used as protective surfacing under playground equipment must meet certain impact attenuation criteria. The CPSC has outlined the performance criteria that various types of*

*surfaces must meet. Manufacturers of unitary materials, shredded rubber, recycled tires, and engineered wood fiber are expected to supply all compliance and test reports for their surfaces. In the event that local landscape materials are used you may consult with the Consumer Product Safety Commission's Handbook for Public Playground Safety for information regarding the type and depth of common surfaces. For more information, visit [www.cpsc.gov](http://www.cpsc.gov), publication #325.*

It is important that the surfacing material be able to protect a child from a fall from the height of the playground equipment. To properly assess the surfacing material the following should be noted; type of material, depth or thickness of the surfacing material and the height of the equipment. See the recommendations for critical height and fall height found in the Consumer Product Safety Commission's Handbook for Public Playground Safety.

#### Unacceptable Playground Surfacing

- Grass
- Concrete / asphalt
- Packed earth
- Other hard surfaces



Grass and packed earth are unacceptable playground surfaces.

#### Acceptable Playground Surfacing

- Sand, gravel, shredded rubber
- Wood chips, shredded bark mulch, engineered wood fiber
- Unitary materials certified for playground use such as poured-in-place rubber, rubber tiles, bonded rubber



Rubber tiles are a good choice for unitary playground surfacing.

## Loose-fill Surfacing Materials

When impacted, loose-fill materials move downward and/or outward, providing some fall cushioning but also require ongoing raking and replenishment to keep the materials in place at an appropriate depth. Loose-fill materials must be contained in some manner either by earth berms, timber, or plastic borders called curbs. Rubber wear mats can be placed in high impact areas, such as under swings and the base of slides, to reduce the frequency of raking. The CPSC classifies loose-fill materials as organic or inorganic.

Examples of organic loose-fill materials are engineered wood fiber and shredded bark mulch. Engineered wood fiber is a wood product that is made exclusively for use under playground equipment. Organic materials require more frequent replenishing than inorganic materials because they naturally decompose over time. Wood fibers must be drained well and topped off regularly to maintain the desired depth and to prevent the growth of mold and bacteria.

Inorganic loose-fill materials include shredded rubber, sand, pea stone, and gravel. Inorganic materials do not decompose and require less frequent replacement. Frequently found on older playgrounds, sand and gravel do not meet current ADA accessibility guidelines and require frequent raking and turning due to their tendency for compaction. Raking and turning can help prevent gravel from developing a hard layer known as hardpan that resembles concrete. Shredded rubber is attractive and durable, does not form hardpan, but must be maintained at the desired depth.

All types of loose-fill materials need to be maintained at an acceptable depth in order to retain their fall attenuation properties. **The Consumer**

**Product Safety Commission’s Handbook for Public Playground Safety recommends that there be 12 inches of loose-fill materials under playground equipment. Under no circumstances should loose-fill materials be less than nine inches.** Refer to the table entitled “Minimum compressed loose-fill surfacing depths” for information about the fall attenuation properties of various types of surfacing. Your role of raking and leveling the loose-fill surfacing materials will be essential in helping to protect children on the playground.

Maintaining the protective nature and longevity of loose-fill surfacing includes the following tasks:

- Raking and leveling
- Removing debris
- Decompressing, raking, turning, and tilling
- Replenishing, topping off, and replacement of worn out materials
- Installation and maintenance of border material or curb
- Ensuring proper drainage

Minimum compressed loose-fill surfacing depths		
Inches	Loose-Fill Material	Protects to Fall Height (feet)
9	Shredded/recycled rubber	10
9	Sand	4
9	Pea gravel	5
9	Wood Mulch (non-CCA)	7
9	Wood chips	10



Containment curbs and wear mats help keep loose-fill surfacing materials in place.

### Unitary Surfacing Materials

Unitary products include poured-in-place rubber (rubber particles bound with a liquid urethane), rubber tiles, bonded rubber, and synthetic turf. Unitary surfacing does not require raking, decompressing, or replenishment; however, it may require sanitization or maintenance due to surface debris, vandalism, movement in the tiles, erosion, poor drainage, or worn areas that result from repeated impacts. When unitary surfacing is in need of repair, it should be done immediately as per supplier's instructions. Always consult the manufacturer before applying any chemicals or before pressure washing.

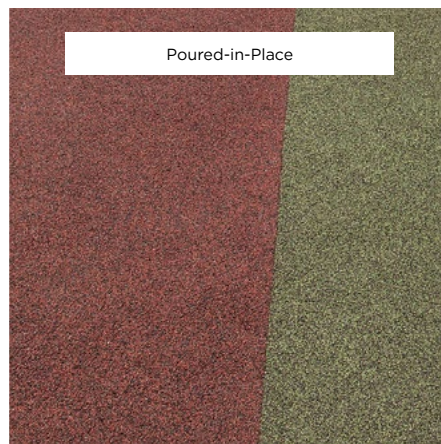
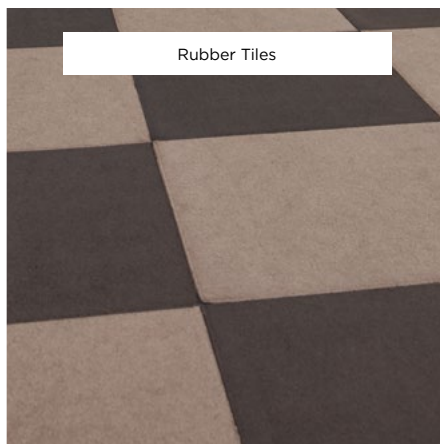
### Making a Purchasing Decision

The generally lower initial cost of purchasing loose-fill surfacing materials should be weighed against

the predictable cost of maintaining it and topping it off regularly. Taking the maintenance costs into account, purchasing unitary materials may be more economical for your school or agency in the long term.

The greatest benefits of unitary materials are the ease of maintenance, predictable cushioning properties, and that the material stays in place. The disadvantages are the generally higher initial cost and the eventual loss of cushioning properties over time. Most unitary materials require a base of compressed stone or concrete/asphalt. The cost of this base should be considered in the overall cost analysis of the surface system. (See your manufacturer's warranty information for the predicted product life.)

### Types of Unitary Surfacing Materials



## Inspection of Protective Surfacing

This section of the sample Low Frequency Inspection form applies to specific types of surfacing. All categories may not apply depending upon the type of surfacing on your school or agency's playground.



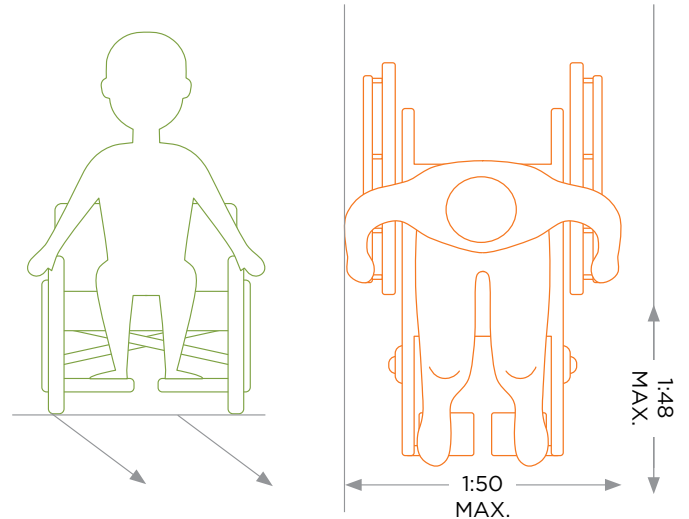
1. Check that loose-fill surfacing is level and the proper depth. Because loose-fill materials get kicked out and ruts develop in high impact areas, all loose-fill materials must be regularly raked level. Similarly, loose-fill materials must be replenished when the surface level drops below the minimum level required for the height of the equipment in the area. Sand and pea stone must be turned regularly to reduce compaction and the formation of hardpan.
2. Check that the use zones (areas with protective surfacing) are clear of obstacles and debris. Toys, site furnishings, and other objects should not be in the use zones. These items and other debris must be removed because they can block fall paths to the safety surfacing, endangering children. In Photo 2 the bench has been pulled into the use zone.
3. Check that the surfacing material drains well and is not holding water. Standing water can cause moss or mold growth, possible slip hazards, and erosion of the subsurface of unitary materials creating depressions and possible trip hazards.
4. Check that wear mats are properly secured in place and level. There should not be any hardware or concrete footing visible on or around the wear mat.
5. Check that unitary surfaces are intact, free from depressions, ruts, and worn areas. Look for general wear-and-tear of the unitary materials, paying special attention to high impact areas like swings and slide exits. Rubber surfacing can be tested to ensure it is still meeting impact attenuation standards.

### Maintaining Accessibility of Surfacing

The Americans with Disabilities Act is a Federal law which requires that playgrounds installed after 1991 meet the recommendations of the Americans with Disabilities Act. Information regarding how to fully comply with the ADA may be found in the 2010 ADA Accessibility Design Standards. This document may be downloaded by going to: [www.ada.gov/2010ADASTandards\\_index.htm](http://www.ada.gov/2010ADASTandards_index.htm).



*By ensuring proper surfacing precautions are taken, the play experience can be accessible, fun, and safer for all.*



One of the largest deterrents to accessibility is the surface that a person using a mobility device must use to get from one location to another. If the surfacing or accessible route of travel is not maintained properly, access to the playground equipment may not be provided.

Unitary surfacing material, engineered wood fiber, and some engineered rubber fibers are considered to be accessible to persons using mobility devices. The manufacturers of these materials must be able to prove that their product meets the criteria found in the ASTM F1951-99 Standard. This standard tests whether or not a surface is considered accessible to a mobility device user.

In order for the above noted surfaces to be considered accessible they must be maintained. Accessible surfaces have to be essentially level with a cross slope of no more than 1:48 and a running slope that does not exceed 1:16 beveled.

All surfacing materials, especially loose materials settle over time. During low frequency inspections check areas where two surfaces come together such as a concrete sidewalk adjoining a unitary material. Make certain that the vertical change of elevation does not exceed 1/2 inch and that there is not a gap between the surfaces greater than 1/2 inch measured horizontally. Where loose surfaces are used, check to make certain that there is an appropriate transition from a unitary surface such as a sidewalk or rubber accessible route and the loose material. The solid surface should be beveled or ramped down into the loose material so that a drop off is not created when the loose fill material compresses or is kicked away.

Check the surface at the base of a transfer platform to make certain that the surface is essentially level and that the distance from the top of the protective surface to the top of the transfer platform is not less than eleven inches and is not more than 18 inches.

*The sample inspection form provided on page 25 is designed as a low frequency report for an existing playground. It is not intended as an instrument for a playground audit. It is understood when using this inspection report that the play equipment, play surfaces, use zones, and accessibility were compliant at the time the play area was designed and installed. Should there be any questions regarding the above compliance matters, a full scale audit needs to be conducted by a Certified Playground Safety Inspector (CPSI), prior to using an inspection form.*



# Low Frequency Inspection (Quarterly/Semiannually)

Playground					Inspector					Date	
Page _____ of _____ (Hands On- Physical Check Inspector)						Equipment List					
<b>GENERAL SAFETY</b>											
1. Warning labels and age signage present and legible											
2. Equipment free of crush and shear hazards											
3. Equipment free of entanglement hazards, protrusions											
4. Equipment free of sharp points, edges											
5. Bolts ends less than two threads, rounded, smooth											
6. No change in openings causing head entrapment											
7. No insect, bird or animal infestation											
<b>FINISHES &amp; MATERIAL CONDITIONS</b>											
1. Metal surfaces are free of rust and loose paint chips											
2. Surfaces are clean, free of graffiti and vandalism											
3. Wood is free of rot, splinters, warping, checking											
4. Free of bent, broken, missing parts, excessive wear											
5. Plastics components are free of cracks											
6. Welds are intact and crack free											
7. PVC coatings are not peeling and in good condition											
<b>FASTENERS</b>											
1. Hardware is present, tight and fully engaged											
2. Pipe caps are present on ends of tubing											
3. Fittings/bearings are functional, greased, squeak free											
4. Turnbuckles are engaged and properly adjusted											
5. Cables/ropes are anchored and not unraveled											
<b>STRUCTURAL MEMBERS</b>											
1. Footings/anchoring devices are secure and stable											
2. Structural members are sound and securely fastened											
3. Springs/rocking components in good repair											
<b>GRIPPING &amp; STEPPING COMPONENTS</b>											
1. Hand gripping components secure and do not rotate											
2. Stepping surfaces are level, stable and clean											
3. Foot holds/rungs are tight and free of excessive wear											
<b>SLIDES</b>											
1. Slide bedway and rails are smooth and clear of debris											
2. Bedway at platform is free of entanglement hazard											
<b>SWINGS &amp; MOVING COMPONENTS</b>											
1. Chains are not twisted and are free of excessive wear											
2. S - hooks are not worn and closed to within 0.04 inch											
3. Swing hangers & bushings are free of excessive wear											
4. Swing seats are smooth & in good condition											
5. Tire seats are lightweight, smooth & in good condition											
6. Tire swing assemblies greased and in good condition											
7. All moving components are in good condition, secure, & lubricated											
<b>OTHER</b>											
<b>PROTECTIVE SURFACING</b>						Comment on back					
1. Loose-fill surfacing is level and at proper depth											
2. Use zones are clear of obstacles and debris											
3. Surface drainage is functional with no standing water											
4. Wear mats are properly secured in place, level											
5. Unitary surfaces are intact, free of depressions & ruts											
6. Surfaces intended to be accessible are essentially level (1:48 cross slope, 1:16 running slope)											
7. Accessible surfaces are free of abrupt changes of elevation greater than ½ inch and do not have cracks or gaps greater than ½ inch horizontal.											
8. Transfer platforms have a height above the surfacing between 11 and 18 inches.											
<b>Codes</b>	N/A (Not Applicable)	✓ (Okay)	M=Maintenance	R=Repair Required	O=Outstanding Issue	P=Parts Needed	X=Corrected				

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

*Note: This is a quarterly/semi-annual report and designed as a sample inspection report. Manufacturer's maintenance instructions for inspection schedules and replacement parts are to be referred to prior to any repairs. Maintenance schedules should be developed based upon actual or anticipated playground use" (CPSC). Retain all inspection reports to assist in developing comprehensive maintenance programs, inspection schedules, and for future budgeting and planning.*

## Codes

The following codes can be used to indicate the present condition of the equipment so that corrective action can be planned, tracked, and documented.

Code	Explanation
N/A (Not Applicable)	A “N/A” indicates that the component or information is non-existent or not provided, either because it does not apply to a particular component or because the answer is not available.
√ (Okay)	A check mark indicates that the component has been checked and that the conditions are satisfactory.
M (Maintenance)	An “M” indicates that the condition was corrected during the inspection. Examples would be tightening hardware or removing debris.
R (Repair)	An “R” indicates that repairs cannot be readily completed while the inspector is on site and follow up repairs will be necessary by a skilled staff member or outside vendor. If the condition could present a hazard to users, the equipment should be taken out of service until the situation can be corrected. When the repairs have been made, indicate so by marking an “X” for completed maintenance.
O (Outstanding)	<p>An “O” indicates that a serious hazard may be present requiring additional action or that the inspector wants or needs a second opinion. If the condition could present a hazard to users, the equipment should be taken out of service until the situation can be corrected. When the repairs have been made, indicate so by marking an “X” for completed maintenance.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• The inspector may not have the authority to order the removal of a piece of equipment.</li> <li>• The inspector may be unsure of the existence of a protrusion or entanglement hazard and needs to consult with a CPSI.</li> <li>• The structural integrity of a piece of playground equipment is in question and a structural engineer must be consulted.</li> </ul>
P (Parts)	A “P” indicates that replacement parts are required and need to be ordered and installed. If the condition could present a hazard to users, the equipment should be taken out of service until the situation can be corrected. When the repairs have been made, indicate so by marking an “X” for completed maintenance.
X (Corrected)	An “X” indicates that all necessary work and actions have been taken to repair, replace, or remove an unacceptable condition. Make certain that the date of correction is written beside the “X.”

Comments:

## HIGH FREQUENCY INSPECTION GUIDE

This inspection form guide details daily/weekly maintenance tasks that should be done within the play environment. Each section of the form is described in detail below. Refer to the previous section for additional inspection task details and information about playground surfacing.

### Important Headings to Document

- The name, location, or proper means of identifying the playground
- The name and position of the person conducting the inspection
- The date and day of the week of the inspection

#### General Areas

- The play area should be cleaned of trash, broken glass, storm remnants (like tree limbs), and other items that may be hazardous. Trash cans should be emptied when necessary.
- Entry and perimeter walkways should be free from ice and trip hazards such as scattered gravel or sand.
- The general area should be checked for vandalism and changes made to the environment by its users. Examples include objects like site furnishings moved into the use zones and ropes or other items tied to the equipment.
- Visually check to see if the area is free from standing water and that drains are clear and working.
- Visually inspect above the play area for dead trees and branches. After a storm, look for broken limbs and damaged trees and electrical wires that may fall into the play area.



Clean up playground litter.

*Be aware of dangers created by weather conditions and vandalism.*



#### Protective Surfaces


- Clean away foreign materials, like rocks, that could affect the impact attenuation (cushioning) ability of the surface or be a hazard.
- Loose-fill surfacing materials require regular/daily raking and leveling, particularly under and around swings and slide exits. The use of wear mats will minimize the need for raking under these components.
- Raking can keep loose-fill materials level and prevent compaction.

 *Mark upright support posts and borders/curbs to indicate the proper surfacing depth.*

- Unitary surfaces can deteriorate, crack, and separate. Check for any severe wearing and conditions that could create trip hazards.
- If there are exposed concrete footings, level and/or top off the surfacing or close the area for use.
- Loose borders/curbs can present a trip hazard and should be corrected.
- Standing water can breed mold, mildew, and bacteria; speed up the deterioration of organic loose-fill materials; affect the impact attenuation of loose-fill materials; and freeze, reducing the protective characteristics of the surfacing.

### Playground Equipment

- Check on and around the equipment for damage resulting from vandalism or normal use. Damaged, missing, and loose parts require immediate repair or replacement.
- Stability may be compromised by loose concrete footings, which can develop under moving equipment (swings, spring riders, whirls) or when the ground has become saturated. Bent or unstable equipment must be addressed immediately.
- Foreign objects such as toys, ropes, dog leashes, and sticks should be removed from the playground equipment. Ropes tied onto equipment need to be cut off immediately because they can become strangulation hazards.
- Because moving parts are subject to heavy use, the integrity of the component, all its parts, and the anchor or attachment point should be checked frequently and should be greased or lubricated during inspection.
- Glass, drug paraphernalia, and other dangerous materials should be removed.

 *Check inside tunnels and tube slides as well as between the sections of slides to make certain there are no hidden dangerous materials.*



### Other

In this section of the inspection form, add any other condition not already listed that should be noted.

### Codes

See the reverse side of each inspection form for an explanation of the codes to use when completing the inspection.

### Inspection Comments

Specifically detail any items requiring action by personnel and note the date of repair. Utilize the back of the inspection report for further descriptions and/or drawings.

### Review

This report is to be reviewed, approved, dated, and retained by the owner or their representative, demonstrating his or her awareness of the conditions noted in the report.



## High Frequency Inspection (Quarterly/Semiannually)

Playground		Inspector		Week of	
------------	--	-----------	--	---------	--

Walk-through Visual Check & Routine and Cleaning Tasks	Mon	Tue	Wed	Thur	Fri	Sat	Sun
<b>GENERAL AREA</b>							
Area is free from all trash, broken glass, weeds, and storm remnants							
All walkways are free from ice and trip hazards							
No hazards have been created by vandalism or user modification							
Drains are working properly							
There are no overhead hazards that could fall on users							
<b>PROTECTIVE SURFACES</b>							
Surfaces are free from all debris and foreign material							
Loose-fill surfaces are level, particularly under swings & slide exits							
Loose-fill surfaces are raked to proper depths and properly compacted							
All unitary surfaces are intact and free from trip hazards							
There are no exposed footings or loose borders/curbs							
Surface drainage is functional with no standing water							
Protective surfaces are not frozen							
<b>PLAYGROUND EQUIPMENT</b>							
There are no damaged, loose, vandalized, or missing parts							
Equipment is not bent and is stable							
There are no user modifications, like ropes tied to parts							
All moving parts, like swing seats and chains, are in good repair							
<b>OTHER</b>							

<b>Codes</b>	N/A (Not Applicable)	√ (Okay)	M=Maintenance	R=Repair Required	O=Outstanding Issue	P=Parts Needed	X=Corrected
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Inspection Comments	Details (use back of form for additional comments) <input type="checkbox"/> See Attached	Repair Date
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

**Note:** This is a high frequency report and designed as a visual assessment of the play area, play equipment, and play surfacing. Frequently used playgrounds may require a more detailed report by a staff member experienced in repair and playground inspection. Always consult manufacturer's maintenance instructions for inspection schedules and replacement parts. "Maintenance schedules should be developed based upon actual or anticipated playground use" (CPSC). Retain all inspection reports to assist in developing comprehensive maintenance programs, inspection schedules, and for future budgeting and planning.

## Codes

The following codes can be used to indicate the present condition of the equipment so that corrective action can be planned, tracked, and documented.

Code	Explanation
N/A (Not Applicable)	A “N/A” indicates that the component or information is non-existent or not provided, either because it does not apply to a particular component or because the answer is not available.
√ (Okay)	A check mark indicates that the component has been checked and that the conditions are satisfactory.
M (Maintenance)	An “M” indicates that the condition was corrected during the inspection. Examples would be tightening hardware or removing debris.
R (Repair)	An “R” indicates that repairs cannot be readily completed while the inspector is on site and follow up repairs will be necessary by a skilled staff member or outside vendor. If the condition could present a hazard to users, the equipment should be taken out of service until the situation can be corrected. When the repairs have been made, indicate so by marking an “X” for completed maintenance.
O (Outstanding)	<p>An “O” indicates that a serious hazard may be present requiring additional action or that the inspector wants or needs a second opinion. If the condition could present a hazard to users, the equipment should be taken out of service until the situation can be corrected. When the repairs have been made, indicate so by marking an “X” for completed maintenance.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• The inspector may not have the authority to order the removal of a piece of equipment.</li> <li>• The inspector may be unsure of the existence of a protrusion or entanglement hazard and needs to consult with a CPSI.</li> <li>• The structural integrity of a piece of playground equipment is in question and a structural engineer must be consulted.</li> </ul>
P (Parts)	A “P” indicates that replacement parts are required and need to be ordered and installed. If the condition could present a hazard to users, the equipment should be taken out of service until the situation can be corrected. When the repairs have been made, indicate so by marking an “X” for completed maintenance.
X (Corrected)	An “X” indicates that all necessary work and actions have been taken to repair, replace, or remove an unacceptable condition. Make certain that the date of correction is written beside the “X.”

Comments:

# Performing Required Maintenance

Construction fencing may be used temporarily to close the play area for repairs. Caution tape should only be used for a very short time and while maintenance staff is onsite.



Due to the wide variety of playground equipment, and materials used to construct the equipment, there are many types of repairs that may need to be done to keep playground equipment and surfacing compliant and functional. You may choose to handle some of the more common repairs, like tightening or replacing hardware, repainting structures, or topping off loose fill surfacing to compliant depths. Other repairs, including part replacement, entrapments, or repairing unitary surfaces require specialized knowledge and experience and are best left to a professional crew to ensure your playground meets all applicable standards before being put back into service.

To understand the best way to handle a repair, start with the company you purchased the playground from. Many have local representatives that can even come to your site and evaluate the best way to handle a repair. If you don't remember the name of the company or the local sales representative/agency, check your paperwork for this information, or look on the equipment for a sticker that should list the name of the manufacturer, and often their phone number. The sticker is usually located on an

upright (the vertical poles that attach the structure to the ground.) The manufacturer name might also be found molded into plastic parts, or stamped onto post caps or collars. The manufacturer will be able to send the correct part, as well as refer you to a professional if the repair requires a trained specialist.

There will be times when it is necessary to take a piece of equipment or a component out of service either temporarily while a repair is being made or longer term when replacement parts are on order. It is important that care is taken to protect the site while keeping children from coming into contact with the hazard that has been identified. How this is done can impact the safety of the playground.

When making a repair such as replacing an "S" hook or swing seat or performing routine maintenance where the person making the repair is on site, it is acceptable to rope off the area using caution tape or plastic construction fencing. A sign stating that the equipment is temporarily closed for repair should be placed next to the equipment or on the plastic fencing. Caution tape is only acceptable for a very short time while the maintenance staff is performing the repair. Plastic construction fencing in conjunction with a sign

## Performing Required Maintenance

may be used for longer periods of time but should still be considered to be a temporary solution.

Keeping an inventory of items that are commonly replaced such as “S” Hooks, swing chains, swing hangers and swing seats allow maintenance to be performed without having to take the equipment out of service for any length of time.

When it will take days or weeks to make the repair a more permanent solution should be considered. If a component or section of equipment is damaged it may be necessary to keep children from using that piece of equipment while a replacement part is being ordered. If the equipment is freestanding, meaning it is not part of a composite unit, consider installing portable fencing around the entire piece of equipment with a sign that states that this equipment is closed for repair.

If the play component is part of a composite structure and children could still play on the rest of the equipment without being in danger, the damaged component could be taken out of service instead of the entire composite structure. When doing this it is important to avoid creating a greater hazard. Consider removing the damaged component and blocking off the entrance to the component from the platform it attaches to.

A piece of plywood wide enough to block off the entire opening and at least 38 inches high could be attached to the structure. The plywood should be attached to the structure so that children are not able to remove it and in such a manner that sharp edges, protrusions, entrapment and entanglement hazards are not created. Many agencies order extra protective barriers from their playground equipment suppliers so that when a component is damaged they can remove the component and put a protective barrier in the opening until a replacement component can be ordered and installed.

Often, depending on the design of the damaged component, there are metal pipes that are used to support the play components that are embedded into the ground. It may not be desirable to remove these support pipes, especially if they will be reused when the replacement part is received. Care should be taken to properly protect children from any hazards that might be associated with the remaining product.

Never leave what was intended to be a temporary solution in place for an extended period of time. If there is no money for replacement parts, a more permanent solution should be considered or the product should be removed completely.



# Nature Play Areas

Providing natural play areas for children is gaining in popularity. Childcare centers, schools, and parks are recognizing the need for children to interact with the natural world. A comprehensive program of playground safety will also include inspection and management of natural play areas.



*Children playing together in a naturalized outdoor learning environment.*

For the purposes of this workbook, “Nature Play” is an environment that allows children to engage in unstructured play with natural materials in a natural setting. There are two distinct types of natural settings: undeveloped areas and man-made areas.

## Undeveloped Natural Environment

These are specific environments where nature is simply there for the child to discover and explore. These areas might be a meadow, waterway, and woods that are designated for natural play. It might be a section of the woods off of a trail that is set aside for children to interact with.

Good safety management practices would suggest that even though these areas are undeveloped you are inviting the children to play in this environment and therefore care must be taken to ensure that no hazards are present beyond those that are part of a natural environment. A trained inspector should check these areas looking for hazardous conditions such as, but not limited to broken branches, leaning fallen trees, rotting or decomposed trees, poison plants, or evidence of vandalism that has created a hazard. Routine maintenance should be performed to remove trash and debris and take care of any issues that might surface. It is also recommended that playground surfacing guidelines are followed, as falls from natural materials also may occur.



*A secondary pathway encourages exploration with the natural environment as well as the manufactured play structure.*

### Man-Made Nature Play

A man-made nature play area is one where the owner has taken natural elements such as boulders and tree sections and placed them in an area with the intention that children interact with the materials in an unstructured manner. Many of these areas are rich in diverse plant materials, loose parts and may include natural or man-made water areas. In this category, there is quite a range of complexity of design. Often the intent of these areas is to allow children the freedom to explore the natural materials and to provide an element of risk taking that is appropriate for the age of the child. Careful consideration of safety concerns should be given to these developed areas.

The area should be evaluated giving consideration to how the children will be using the natural materials. Take a common sense approach using professional judgment. If the intent of the element is for children to climb, protective surfacing materials should be provided in an area where a child might be expected to fall. Precautions should be taken to make certain that large rocks and logs are anchored securely, are stable and not in danger of coming apart or moving. When combining or constructing natural materials,

make certain to eliminate head entrapments in completely bound openings and protrusion hazards. The playground standards do not officially have to be applied in a strict sense but do give them consideration to promote a safer environment. Before creating your inspection and maintenance protocol, have conversations with your agency safety management staff to make certain that you have provided a means to fulfill your agency's safety and risk obligations.

When natural play elements are combined with traditional play equipment such as using boulders to access a platform or attaching a net climber to a log or a rock formation, the configuration should be treated as if it is playground equipment and must meet the criteria of the ASTM F1487 Standards, and protective surfacing must be provided.

Mankind has been playing in nature since the beginning of time. Only in recent years has our society felt the need to define and organize what until now was considered to be so natural. Nature play is ever changing with the dawn of a new day and each change of season. Inspection and management protocols need to be just as flexible.

# Resources

## Glossary

**CPSI** - Certified Playground Safety Inspector is a person who is certified by the National Recreation and Park Association to perform playground safety inspections.

**Crush and shear points** - These junctures can cause laceration, abrasion, amputation or fracture during use. They are defined as any point that can entrap a 5/8 inch diameter rod when one portion of the moving component closes down upon another component.

**Entanglement** - This condition occurs when a person's clothing or items worn around the person's neck become caught or entwined on play equipment. Entanglement can result in strangulation, loss of a body part, or emotional injury.

**Entrapment, head** - Any condition which impedes withdrawal of the head when the body has penetrated an opening. Head entrapment can result in strangulation.

**Guardrail** - The device around a platform or elevated surface that helps protect a child from an inadvertent fall.

**Impact attenuating surfacing**- Material(s) to be used within the use zone of any playground equipment. Protective surfacing shall meet the minimum impact attenuation requirements of ASTM specification F1292.

**Partially bounded opening** - Any opening in a piece of play equipment that is not totally enclosed by boundaries on all sides so that the perimeter of the opening is discontinuous.

**Projection** - A component which, due to its physical nature, must be tested to determine whether or not the projection would be considered to be a protrusion or entanglement hazard. Such a component would fit inside one of the three projection gauges.

**Protective barrier** - An enclosing device around an elevated surface that prevents both inadvertent and deliberate attempts to pass through the device.

**Protrusion** - A projection which, when tested in accordance with the requirements herein would be found to be a hazard having the potential to cause bodily injury to a user who impacts it.

**Sharp edge/point** - An edge or point that could lacerate the skin.

**Trip hazard** - An abrupt change in elevation that is not clear and obvious to the user.

**Use zone** - The area beneath and around equipment where a child might be expected to land if they were to fall from the equipment. This area must be covered with an impact attenuating surfacing material.

## Organizations

**NRPA** - National Recreation and Park Association ([www.nrpa.org/playgroundsafety](http://www.nrpa.org/playgroundsafety); 800-626-6772)

NRPA is dedicated to educating professionals and the public on the essential nature of parks and recreation.

**IPEMA** - International Play Equipment Manufacturers Association ([www.ipema.com](http://www.ipema.com); 888-944-7362)

IPEMA is a non-profit, membership, trade association that represents and promotes an open market for manufacturers of playground equipment and surfacing.

**NPPS** - National Program for Playground Safety ([www.uni.edu/playground](http://www.uni.edu/playground); 800-554-7529)

NPPS is the premier non-profit organization in the United States delivering training and services about outdoor play and safety.

**ASTM** - ASTM International ([www.astm.org](http://www.astm.org); 610-832-9500)

ASTM, formerly the American Society for Testing and Materials, is an independent and renowned developer of technical standards utilized in testing a multitude of products, including playground equipment and related products.

**CPSC** - Consumer Product Safety Commission ([www.cpsc.gov](http://www.cpsc.gov); 800-638-2772)

The CPSC regulates many products, including playground equipment and related products, to help ensure consumers/users safety.

**Access Board** - U.S. Architectural and Transportation Barriers Compliance Board ([www.access-board.gov](http://www.access-board.gov); 800-872-2253)

The Access Board has completed Accessibility Guidelines for Play Facilities as set forth in the Americans with Disabilities Act of 1990.

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# Playground Inspection & Maintenance Guide

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For more information on building  
communities through play &  
recreation:

BigToys.com | (866) 814-8697