140. PLAYGROUNDS, SPORTS FIELDS, AND PARKS

01. Scope: (7-1-97)

a. Playgrounds, sports fields, and parks, shall conform to other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than specified herein. (7-1-97)

02. Definitions: For definitions of other terms used in this section, see sub-section 010 of this standard. (7-1-97)

a. Composite Structure is two (2) or more play structures, attached or directly adjacent, to create one integral unit that provides more than one play activity. (7-1-97)

b. Entrapment is any condition that impedes withdrawal of a body or body part that has penetrated an opening. (7-1-97)

c. Fall Zone is the surface under and around a piece of play equipment onto which the user falling from or exiting from the play equipment would be expected to land. (7-1-97)

d. Footing is a means for anchoring playground equipment to the ground. (7-1-97)
e. In-fill is material used in a protective barrier to prevent a user from passing through the barrier. (7-1-97)

f. Non-Rigid Component is a component of playground equipment that significantly deforms or deflates during the normal use of the equipment. (7-1-97)

g. Preschool Age Children are children from ages two (2) to five (5) years. (7-1-97)

h. Protective Barrier is an enclosing device around an elevated platform that is intended to prevent both inadvertent and deliberate attempts to pass through the barrier. (7-1-97)

i. Protective Surfacing is surfacing material in the fall zone that conforms to the requirements of this section. (7-1-97)

j. Roller Slide is a slide that has a bed consisting of a series of individual rollers over which the user travels. (7-1-97)

k. School Age Children are children from ages over five (5) years but not over twelve (12) years of age. (7-1-97)

l. Tube Slide is a slide in which the sliding section consists of a totally enclosed tube or tunnel. (7-1-97)

m. Upper Body Equipment is a device designed to support the user by the hands only. (7-1-97)

n. Critical Height is the approximation of the maximum fall height from which a life-threatening head injury from playground equipment to the protective surfacing below it would not be expected to cause a life threatening head injury. (7-1-97)

03. General Requirements: (7-1-97)

a. All playground equipment, facilities, and grounds; sports field equipment, facilities, and grounds; and park equipment, facilities, and grounds shall be maintained in a safe and sanitary condition. (7-1-97)

b. The U.S. Consumer Product Safety Commission (CPSC) "Handbook for Public Playground Safety" and the American Society for Testing and Materials (ASTM) F1487 "Standard consumer Safety Performance Specification for Playground Equipment for Public Use" are to be used as guides to provide additional information that may not be covered in this standard. (7-1-97)

c. Every person, firm, corporation, agency, subdivision, or unit of government who is the operator, owner, lessee, permittee, or licensee of any playground, sport field, or park shall use safety devices and safeguards and shall adopt and use practices, means, methods, operations, and processes which are adequate to render such places safe. (7-1-97)
d. Playgrounds shall be organized into different areas to prevent injuries caused by conflicting activities. Active, physical activities shall be separated from more passive or quiet activities. Playgrounds installed after the printing of this standard will have separated, age appropriate equipment for children two-to-five (2-5) and five-to-twelve (5-12) years old. This equipment shall be separated by adequate spacing and marked to identify the intended user group with clear sight lines between the playgrounds to facilitate supervision. (7-1-97)

e. Fall zones containing protective surfacing will be provided with coverage areas as specified in this section for each type of equipment. However, fall zones will extend a minimum of six (6) feet from all edges of all types of equipment. The depth of fall zone materials will meet the requirements for Critical Height as described in sub-section 140.14 of this section. With the exception of composite structures with multiple play events, fall zones will not overlap. For example; the fall zone for a swing will not overlap with the fall zone of a slide exit region. (7-1-97)

f. Sport fields shall be organized into different areas to prevent injuries caused by conflicting activities. Active, physical activities shall be separated from more passive or quiet activities. (7-1-97)

g. Popular or heavy use pieces of playground equipment or activities shall be dispersed to avoid over crowding in any one area. (7-1-97)

h. The layout of activity areas and equipment shall be without visual barriers so that there are clear sight lines to facilitate supervision. (7-1-97)

i. Moving playground equipment, such as swings and merry-go-rounds shall be located toward a corner or edge of the play area. (7-1-97)

j. Care shall be taken to ensure that the play and traffic patterns of children using adjacent components of composite equipment are complementary. (7-1-97)

k. The following equipment will not be used in public playgrounds: Trampolines, roller slides, multiple occupancy swings (with the exception of rotating, multiple axis swings), free swinging trapeze bars and exercise rings. Note: Exercise rings do not apply to overhead hanging rings, such as those used in ring trek or ring ladders. (7-1-97)

l. Animal figure swings shall not be used on playgrounds or in parks due to the impact hazard posed by their high mass. (7-1-97)

m. Free swinging ropes/chains etc., which may fray or otherwise form a loop, shall not be used on playgrounds or in parks because of the potential strangulation hazard. (7-1-03)

04. Installation and Maintenance of Equipment: (7-1-97)
a. Playground equipment shall be properly assembled by following the manufacturer's instructions or in the event that manufacturer's instructions are not available then accepted good practices shall be used. (7-1-97)

b. Playground equipment shall be stabilized and anchored to withstand the maximum anticipated forces generated by active use, which might cause it to overturn, tip, slide, or move in any way. (7-1-97)

c. Playground equipment shall be inspected monthly, during periods of use, for any potential hazards, for corrosion or deterioration from rot, insects, normal wear, or weathering. (7-1-97)

d. All hazards or defects to playground, sport field, and park equipment, identified during inspections, shall be repaired promptly. Equipment found to be hazardous or have defects shall be removed from service until such time as the hazard or defect is eliminated. (7-1-97)

e. Playground, sport field, and park areas shall be checked monthly, during periods of use, for broken glass or other dangerous debris. (7-1-97)

f. Equipment fasteners, connecting, and covering devices shall not loosen or be removable without the use of tools. (7-1-97)

g. Lock washers, self locking nuts, or other locking means shall be provided for all nuts and bolts to protect them from detaching. (7-1-97)

h. Hardware in moving joints shall be secured against unintentional or unauthorized loosening. (7-1-97)

i. All fasteners shall be corrosion resistant and be selected to minimize the likelihood of corrosion to the materials they connect. (7-1-97)

j. Bearings in moving joints shall be easy to lubricate or be self-lubricating. (7-1-97)

k. Fastening devices, such as but not limited to S-hooks, pelican hooks, and C-hooks, shall be closed. A devise is considered closed when there is no gap or space greater than zero point zero-four (0.04) inches (one (1) mm) when measured with a feeler gage. (7-1-97)

l. Wooden equipment shall be assembled using bolts, lag bolts and/or screws and glue. Nails shall not be used to assemble wooden equipment. (7-1-97)

m. To avoid risk of contact burn injury due to intense sunlight bare metal or painted metal surfaces on platforms shall be avoided unless they can be located out of the direct rays of the sun. (7-1-97)

n. Wood intended for playground equipment that is not naturally rot and insect resistant shall be treated to resist rot and insect attack. Creosote, pentachlorophenol, tributyl tin oxide and surface
coatings that contain pesticide will not be used on playground equipment. Owner/operators shall insure that equipment meets with this standard.

0. When twenty-five (25) percent or more of the metal of chain links, clevises, S-hooks, and the like has worn away, they shall be replaced. (7-1-97)

p. Tires used on playgrounds, sports fields, and in parks shall be replaced or removed whenever metal parts are exposed. Steel belted tires shall not be used. (7-1-97)

05. General Hazards: (7-1-97)

a. There shall be no sharp points, corners, or edges on any component of playground, sports field, or park equipment. (7-1-97)

b. The exposed open ends of all tubing or pipe not resting on the ground or otherwise covered shall be provided with caps or plugs that cannot be removed without the use of tools. (7-1-97)

c. Wood parts shall be smooth and free from splinters. (7-1-97)

d. All corners, metal and wood, shall be rounded. (7-1-97)

e. All metal edges shall be rolled or have rounded capping. (7-1-97)

f. There shall be no accessible pinch, crush, or shearing points on equipment. (7-1-97)

g. A component or group of components shall not form openings that could become a head entrapment hazard. An opening may present a head entrapment hazard if the distance between any interior opposing surfaces is greater than three and one-half (3 1/2) inches and less than nine (9) inches. When one opening is within this potentially hazardous range, all dimensions of the opening must be considered together to fully evaluate the entrapment potential. EXCEPTION: Openings between the protective surfacing and the bottom edge of the equipment (that is, rails, platforms, steps, and so forth) are exempt from the requirement. (7-1-97)

h. The angle of any vertex formed by adjacent components shall not be less than fifty-five (55) degrees, unless the lower leg is horizontal or projects downwards (see Figure 140.05-A). EXCEPTION: For vertex angles less than fifty-five (55) degrees a rigid shield maybe attached to the vertex between adjacent components as long as the shield is of sufficient size to permit the passage of a nine (9) inch sphere without touching either adjacent component. (7-1-97)

i. There shall be no single non-rigid component (cable, wire rope, or other similar component) suspended between play units or from the ground to the play unit within forty-five (45) degrees of horizontal, unless it is above seven (7) feet from the playground surface and is a minimum of one (1) inch at its widest cross-section. (7-1-97)

FIGURE 140.05-A
j. All anchoring devices, such as concrete footings or horizontal bars at the bottom of equipment, shall be installed below the playing surface to eliminate tripping and impact hazards. (7-1-97)

k. Environmental obstacles in the play area, including rocks, roots, other protrusions, and holes shall be removed or filled in. (7-1-97)

l. Drop-offs of thirty (30) inches or more along walkways, pathways, foot bridges and play areas shall be protected by standard guardrails as required in sub-section 070.13 of this standard, or similar barriers. For foot bridges over water the drop-off measurement shall be made from the bridge deck to the ground below the water. (7-1-97)

m. Handrail height shall be twenty-two (22) inches to thirty-eight (38) inches dependent on the size and age of the intended users. (7-1-00)

n. On any transition from an access mode to a platform, handrails or hand holds shall be provided and shall be adequate to provide support until the user has fully achieved the desired posture on the platform. (7-1-97)

o. Guardrails/barriers used on playground equipment and facilities shall be designed to prevent inadvertent or unintentional falls off the equipment or facilities, to discourage climbing on the
guardrail or barrier, to preclude the possibility of entrapment, and to facilitate supervision. Guardrail height shall be twenty-nine (29) inches to forty-two (42) inches dependent on the size of the users. (7-1-97)

06. Access and Platforms: (7-1-97)

a. Play platforms over six (6) feet in height (with the exception of free standing slides) shall be provided with an intermediate landing. (7-1-97)

b. The steps or rungs of stairways, stepladders, and rung ladders shall be evenly spaced, including the spacing between the top step or rung and the surface of the platform. See Table 140.06-A. (7-1-97)

<table>
<thead>
<tr>
<th>TABLE 140.06-A</th>
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<tbody>
<tr>
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<td>- Two-Abreast</td>
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<tr>
<td>Tread Depth - Open Riser</td>
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<tr>
<td>- Closed Riser</td>
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<tr>
<td>Vertical Rise (tread to tread)</td>
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<tr>
<td>Ramps (not intended for access by the disabled)</td>
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<td></td>
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<tr>
<td>Width - Single file</td>
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<tr>
<td>- Two-Abreast</td>
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</tbody>
</table>

*Not recommended for preschoolers.

**Entrapment provisions apply.

Recommended Dimensions for Access Slope, Tread or Rung Width, Tread
c. Openings between adjacent steps or rungs and between the top step or rung and the underside of a platform shall preclude the possibility of entrapment. (7-1-97)

d. When risers are closed, the treads of stairways and ladders shall prevent the accumulation of sand, water, snow, or other materials on or between steps. (7-1-97)

e. Rungs and other hand gripping components that are intended to be grasped in a manner such that users will support their entire body weight by their hands shall be generally round in cross section with a diameter between zero point ninety-five (0.95) inch and one point fifty-five (1.55) inches with a diameter of one point twenty-five (1.25) inches preferred. (7-1-97)

f. Platforms shall be within +/- two (2) degrees of a horizontal plane and openings shall be provided to allow for drainage. (7-1-97)

07. Slides: (7-1-97)

a. Slide exits shall be located in an un-congested area. (7-1-97)

FIGURE 140.07-A

b. All slides shall be provided with a platform with sufficient length to facilitate the transition from standing to, sitting at the top of the inclined sliding surface. The slide transition platform shall have a minimum length of twenty-two (22) inches. (7-1-97)
c. The slide platform shall be horizontal and have a width at least equal to the width of the slide. (7-1-97)

d. Guard rails or protective barriers shall surround the slide platform and shall conform to the requirements of sub-section 140-06 of this standard. (7-1-97)

e. Slides shall not have any spaces or gaps between the platform and the start of the sliding surface. Slides shall be an integral part of the chute. (7-1-97)

f. Handholds shall be provided at the entrance to all slides to facilitate the transition from standing to sitting thus decreasing the risk of falls. These shall extend high enough to provide hand support for the largest user in a standing position, and low enough to provide hand support to the smallest user in a sitting position. EXCEPTION: Tube slides. (7-1-97)

g. At the entrance to the slide chute there shall be a means to channel a user into a sitting position. This may be a guardrail, a hood, or other device. Whatever means is provided, it shall be of a design that does not encourage climbing. (7-1-97)

h. The average incline of the slide shall not exceed thirty (30) degrees and any change in the slope of the slide chute (wave slide) shall not allow a user to lose contact with the sliding surface. (7-1-97)

i. Straight slides with flat open chutes shall have sides with a four (4) inch minimum height extending along both sides of the slide chute for the entire length of the inclined sliding surface. Slides may have an open chute with a circular cross section providing that the height of the side, measured from the lowest point on the chute is no less than half the width of the slide. (7-1-97)

j. Metal slides shall be in either shaded areas or face north to prevent burns and glare problems caused by direct sun on the slide platform and chute. (7-1-97)

k. The exit region of the slide chute shall be essentially horizontal and parallel to the ground and have a minimum length of eleven (11) inches. (7-1-97)

l. For slides that are no more than four (4) feet in height, the height of the exit region shall be no more than eleven (11) inches from the shock absorbing surface covering. (7-1-97)

m. For slides that are more than four (4) feet in height, the exit region shall be at least seven (7) inches, but not more than fifteen (15) inches, above the shock absorbing surface covering. (7-1-97)

n. Slide exit edges shall be rounded or curved, to prevent lacerations or other injuries which could result from impact with a sharp or straight edge. (7-1-97)

o. Embankment slides shall as far as possible meet the requirements for straight slides. (7-1-97)

p. Spiral slides shall as far as possible meet the requirements for straight slides. (7-1-97)
q. Tube slides shall as far as possible meet the requirements for straight slides. (7-1-97)

r. Barriers shall be provided or surfaces treated to prevent sliding on the top of the slide tube. (7-1-97)

s. The minimum internal diameter of the slide tube shall be no less than twenty-three (23) inches. (7-1-97)

t. The fall zone for slides shall be as illustrated in Figure 140.07-B. (7-1-97)

FIGURE 140.07-B

-- Denotes Fall Zone with Protective Surfacing

Fall Zone for Slides

08. Swings: (7-1-97)

a. Hardware used to secure the suspending elements to the swing seat and to the structure shall not be removable without the use of tools. (7-1-97)

b. Swings shall be suspended from support structures that discourage climbing. A-frame structures shall not have horizontal crossbars. (7-1-97)

c. To prevent inadvertently running into the path of moving swings, swing structures shall be located away from other equipment and activities. (7-1-97)

d. No more than two single axis swings shall be hung in each bay of the supporting structure. (7-1-97)
e. Swings shall not be attached to a composite structure. (7-1-97)

f. Swing seats shall be designed to accommodate no more than one user at any time. (7-1-97)

g. To reduce the severity of impact injuries, wood or metal swing seats shall not be used. (7-1-97)

h. To minimize collisions between swings or between a swing and the supporting structure, the clearances in Figure 140.08-A shall be used. (7-1-97)

FIGURE 140.08-A

i. The horizontal distance between the hangers supporting a to-fro swing seat shall be greater than the width of the seat when occupied, but shall not be less than twenty (20) inches. (7-1-97)

j. Multi-axis tire swings shall not be suspended from a structure having other swings in the same bay. (7-1-97)

k. Multi-axis swings shall not be attached to composite structures. (7-1-97)

l. To minimize the hazard of impact, heavy truck tires shall not be used on multi-axis swings. To minimize the impact hazard, multi-axis swing seats unoccupied weight will not exceed thirty-five (35) lbs. (7-1-97)

m. To minimize cuts and punctures, steel belted tires shall not be used on multi-axis swings. (7-1-97)
n. Drainage holes shall be provided in the under side of tires used for multi-axis swings. (7-1-97)

o. Due to the added stress of rotation and potential for multiple occupancy of the multi-axis swing, the hanger assembly shall be routinely inspected and serviced. (7-1-97)

p. The hanger mechanisms for multi-axis swings shall not have any accessible pinch points. (7-1-97)

q. The minimum clearance between the seating surface of a multi-axis swing and the uprights of the supporting structure shall be a minimum of thirty (30) inches when the tire is in a position closest to the support structure, see Figure 140.08-B. (7-1-97)

FIGURE 140.08-B

r. The fall zone for single axis swings shall be as illustrated in Figure 140.08-C. (7-1-97)
The fall zone for multi-axis tire swings shall be as illustrated in Figure 140.08-D. (7-1-97)
09. Climbing Equipment: (7-1-97)

a. Rungs and other hand gripping components that are intended to be grasped in a manner such that users will support their entire body weight by their hands shall be generally round in cross section with a diameter between zero point ninety-five (0.95) inch and one point fifty-five (1.55) inches with a diameter of one point twenty-five (1.25) inches preferred. (7-1-97)

b. Climbing equipment shall not have climbing bars or other structural components in the interior of the structure onto which the user may fall from a height of greater than eighteen (18) inches. (7-1-97)

c. Climbing equipment shall allow users to descend as easily as they ascend. (7-1-97)

d. Flexible grid climbing devices which provide access to platforms shall be securely anchored at both ends. When one end is connected to the ground, the anchoring devices shall be below the level of the playing surface. (7-1-97)
e. Connections between ropes, cables, or chains within the climbing grid or between tires shall be securely fixed. (7-1-97)

f. Spacing between the horizontal and vertical components of a climbing grid shall satisfy all entrapment criteria of sub-section 140.05 of this standard. (7-1-97)

g. The space between adjacent rungs of overhead climbers shall be greater than nine (9) inches but not more than fifteen (15) inches center to center. EXCEPTION: Overhead rings. (7-1-97)

h. The maximum height of upper body devices shall be no greater than sixty (60) inches for two-to-five (2-5) year/olds and no greater than eighty (80) inches for five-to-twelve (5-12) year olds above the protective surfacing. The maximum height of the take-off/landing structure will be no greater than eighteen (18) inches for two-to-five (2-5) year olds and no greater than thirty-six (36) inches for five-to-twelve (5-12) year olds. The horizontal distance to and from the take-off/landing structure to the first hand hold will be no less than eight (8) inches and no greater than ten (10) inches. (7-1-97)

i. Sliding poles shall be continuous with no protruding welds or seams along the sliding surface and the pole shall not change direction along the sliding portion. (7-1-97)

j. The horizontal distance between a sliding pole and the edge of the platform or other structure used for access to the sliding pole shall be at least eighteen (18) inches. This minimum distance applies to all points down the sliding pole. (7-1-97)

k. All points on the sliding pole at or above the level of the access structure, where the user is likely to reach for the pole, shall not be more than twenty (20) inches from the edge of the access structure. (7-1-97)

l. The sliding pole shall extend at least thirty-eight (38) inches above the level of the platform or other structure used for access to the sliding pole. (7-1-97)

m. The diameter of the sliding pole shall be no greater than one point nine (1.9) inches. (7-1-97)

n. The design of the access structure shall minimize the possibility of interference from surrounding traffic that may be out of the liner of sight of a user during decent. (7-1-97)

o. Individual vertically suspended climbing ropes shall be securely anchored to a footing at the lower end to prevent the rope from being looped back on itself and forming a noose. The anchoring device shall be below the level of the playing surface. (7-1-97)

p. To avoid groin injuries during falls, balance beams shall be no higher than twelve (12) inches. (7-1-97)

q. Climbing equipment such as arch limbers, chain or net climbers, climbing poles, and similar equipment will not be the sole access to equipment intended for the two-to-five (2-5) year old age group users.
10. **Merry-Go-Rounds**: (7-1-97)

a. The rotating platform shall be continuous and approximately circular. The difference between the minimum and maximum radii of a non-circular platform shall not exceed two (2) inches see Figure 140.10-A. (7-1-97)

**FIGURE 140.10-A**

![Diagram of Merry-Go-Round platform with annotations: The difference between dimensions AC and AB should not exceed 2.0 inches.]

**Minimum and Maximum Radii of Non-Circular Merry-Go-Round Platform**

b. No components of the apparatus, including hand-grips, shall extend beyond the perimeter of the platform. (7-1-97)

c. Users shall be provided with a secure means of holding on. Where hand-grips are provided, they shall conform to the general requirements for hand gripping components of sub-section 140.06.e of this section. (7-1-97)

d. There shall not be any accessible shearing or crushing mechanisms in the undercarriage or other part of the equipment. (7-1-97)

e. The rotating platform of a merry-go-round shall not have any sharp edges. (7-1-97)

f. The surface of the platform shall be continuous with no openings between the axis and the periphery that will permit a rod having a diameter of five-eighths (5/8) inch to penetrate completely through the surface. (7-1-97)

g. A means shall be provided to limit the peripheral speed of rotation to a maximum of thirteen (13) feet per second. (7-1-97)

h. Merry-go-round platforms shall not be provided with an oscillatory (up and down) motion. (7-1-97)
i. Fall zone to be six (6) feet from edge of platform. (7-1-97)

11. Seesaws: (7-1-97)

a. The fulcrum of fulcrum seesaws shall not present a pinch or crush hazard. (7-1-97)

b. Tires, or some other shock-absorbing material, shall be embedded in the ground underneath the seats of fulcrum seesaws, or secured on the under side of the seats see Figure 140.11-A. (7-1-97)

FIGURE 140.11-A

![Typical Fulcrum Seesaw](image)

c. Handholds shall be provided at each seating position for gripping with both hands and shall not turn when grasped. Handholds shall not protrude beyond the sides of the seat. Hand-grips shall conform to the general requirements for hand gripping components of Subsection 140.06.e. (7-1-97)

d. Footrests shall not be provided on fulcrum seesaws unless they are equipped with a spring centering mechanism. (7-1-97)

e. Fall zones to extend six (6) feet beyond the fulcrum seesaw. (7-1-97)

12. Spring Rocking Equipment: (7-1-97)

a. The seat design shall minimize the likelihood of the rocker being used by more than the intended number of users. (7-1-97)

b. Each seating position shall be equipped with hand-grips conforming to the general requirements of Subsection 140.06.e. and shall have footrests. (7-1-97)

c. The springs of rocking equipment shall minimize the possibility of pinching either the hands or the feet between the coils or between the spring and a part of the rocker. (7-1-97)
d. The fall zone shall extend six (6) feet beyond spring rocking equipment. The fall zone shall extend seven (7) feet beyond spring boards. (7-1-97)

13. Surfacing Under and Around Playground Equipment: (7-1-97)

a. Loose shock absorbing material shall not be installed over existing hard surfaces (e.g., asphalt, concrete). (7-1-97)

b. Loose shock absorbing material shall have a method of containment (e.g., retaining barriers, excavated pits). (7-1-97)

c. Loose shock absorbing material shall have good drainage underneath the material. (7-1-97)

d. Loose shock absorbing material shall be continuously maintained and renewed or replaced as required to maintain its fall absorbing characteristics. (7-1-97)

14. Protective Surfacing: (7-1-97)

a. Surfaces under playground equipment more that twenty-four (24) inches or higher will have shock-absorbing properties sufficient to reduce the likelihood of serious head injury if a user falls from the highest obtainable point on the equipment. (7-1-97)

b. Surface materials used under playground equipment will meet a Head Impact Criteria (HIC) of less than one-thousand (1,000) and yield a peak deceleration of less than two-hundred (200) Gs. Loose fill materials (wood mulch, sand, gravel etc.) will be installed to ensure proper drainage and will have a means of containment such as curbs, timbers or similar materials. Loose fill materials will be maintained and replaced as needed to maintain the required depth and to keep the materials from compacting. Loose fill materials will not be installed over hard surfaces such as asphalt or concrete. Unitary materials (poured in place urethane, rubber matting, etc.) will be installed in accordance with manufacturer instructions and will provide adequate drainage. (7-1-97)

c. Table 140.14-A below contains the results of tests on seven (7) loose fill materials commonly used on playgrounds. These tests were done by the Consumer Product Safety Commission and may be used as a guide for selecting the type and depth of surfacing material. The table provides the Critical Height (expressed in feet) for each of the surface materials. There are many other materials that may be used, however, any agency installing protective surfacing will ensure that the material has been tested and meets the requirements of 140.14.b. above. (7-1-97)

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<td>------------------</td>
</tr>
<tr>
<td>Wood Mulch(^1)</td>
<td>7</td>
<td>10</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Double Shredded Bark Mulch(^1)</td>
<td>6</td>
<td>10</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Uniform Wood Chips(^1)</td>
<td>6</td>
<td>7</td>
<td>&gt;12</td>
<td>6</td>
</tr>
<tr>
<td>Fine Sand(^1)</td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Course Sand(^1)</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Fine Gravel(^1)</td>
<td>6</td>
<td>7</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Medium Gravel(^1)</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

\(^1\)The depth of any loose fill material could be reduced during use resulting in different shock absorbing properties. For this reason a margin of safety should be considered in selecting a type and depth of material for a specific use.

141. -- 149. (RESERVED)