

Playground Information to Use with the Environment Rating Scales

Based on information from the U.S. Consumer Product Safety Commission (CPSC), Public Playground Safety Handbook, Pub. No. 325, information from the American Society for Testing and Materials Standards (ASTM), Standard Consumer Safety Performance Specification for Public Use Playground Equipment for Children 6 Months through 23 Months, F 2373-05, and information from ASTM Standard Safety Performance Specification for Fences/Barriers for Public, Commercial, and Multi-Family Residential Use Outdoor Play Areas, F2049. These guidelines are a basic overview of areas to review when scoring playground and safety items in the ECERS-R, ITERS-R, FCCERS-R, or SACERS. This list is not to be used as a comprehensive guide for playground assessment.

Fall Zones – A fall zone is the area around and under gross motor climbing, sliding, or swinging equipment where protective surfacing is required to prevent injury from falls. The fall zone should be cleared of items that children may fall onto or run into.

Protective Surfacing – Protective surfacing is intended to cushion falls and prevent serious injuries from any equipment used indoors and outdoors. The amount of a consistent type of surfacing required is based on the fall height of the equipment, which is the height of the highest designated play surface on the equipment. Equipment having a fall height of 18" or less is not required to have protective surfacing; however, no equipment should be placed over concrete, asphalt, stone, ceramic tile, or similar hard surfaces. The surfaces under and around play equipment should be soft enough to cushion falls, which are the most frequent causes of injuries on playgrounds. Common indoor surfaces (such as rugs, tumbling mats, or carpet) and common outdoor surfaces (such as grass or dirt) are not adequate cushioning for gross motor equipment with a fall height greater than 18" even when the equipment is not anchored. For specifics on surfacing depth for different loose-fill materials, see the chart below. When the surfacing in much-used areas becomes displaced (e.g., under swings, at slide exits), it should be raked back or replaced to maintain correct depth. For poured or installed foam or rubber surfaces, the materials must meet the ASTM F1292 requirements, which can be verified through a written statement from the manufacturer.

Minimum compressed loose-fill surfacing depths:

Inches	Of	Loose-Fill Material	Protects To	Fall Height (feet)
6		Shredded/recycled rubber		10
9		Sand		4
9		Pea gravel		5
9		Wood mulch		7
9		Wood chips		10

Equipment Spacing – Fall zones for climbing equipment should extend at least 6 ft on all sides for preschoolers and school-agers and at least 3 ft on all sides for infants and toddlers. Spacing between pieces of equipment must allow children to circulate around or fall from play structures without striking another structure, and permit adults to have easy access to the children who are using the equipment. For preschoolers (2 – 5 years) and school-agers (5 – 12 years), adjacent play structures, with a play surface over 30" high, should be spaced at least 9 ft. apart. If the play surfaces of both structures are 30" high or less, the equipment may be located a minimum of 6 ft. apart. For infants and toddlers (6 – 23 months), play structures with surfaces between 18" and 32" high must be spaced at least 3 ft. apart. Moving pieces of equipment (e.g., swings, merry-go-rounds) should be located in an area away from other play structures so children have adequate room to pass from one play area to another without being struck by moving equipment, and their fall zones should not overlap the fall zone of other equipment.

Requirements for Fences – Fences surrounding a playground must completely enclose the play space and measure at least 48" high, and the latches of access gates should measure at least 48" high. To prevent children from passing through the fence, the vertical members of the fence should be spaced 4" apart or less. A discrete barrier, such as structural bollards, trees, or posts, should be placed along any side of the playground which is within 30 feet of streets or parking lots, to prevent a vehicle from accidentally entering the space.

Age-appropriate equipment provides children with opportunities to safely practice gross motor skills without putting them at risk for unnecessary injury. Appropriate equipment for each age group is listed below:

Infant/Toddler: 6 – 23 months	Preschool: Ages 2 – 5	School-age: Ages 5 – 12
Climbing equipment up to 32" high	Climbing equipment up to 60" high	Climbing equipment up to 84" high
Ramps	Horizontal ladders and overhead rings 60" high or less for 4-5 year-olds	Arch climbers
		Free standing flexible climbers
Single file step ladders	Merry-go-rounds	Stairways
Slides	Ramps	Chain or cable walks
Spiral slides less than 360°	Rung ladders	Fulcrum seesaws
Spring rockers	Single file step ladders	Ladders- horizontal (84" high), rung, and step
Stairways	Slides	Overhead rings up to 84" high
Swings with full bucket seats	Spiral slides up to 360°	Merry-go-rounds
Ramps	Spring rockers	Ring treks
Single file step ladders	Stairways	Slides
	Swings- belt, full bucket (2-4 yrs.), and rotating tire	Spiral slides more than one 360° turn
	Balance beams up to 12" high	Vertical sliding poles
		Swings- belt and rotating tire
		Track rides
		Balance beams up to 16" high

The following equipment is **not appropriate** for any age group: trampolines, swinging gates, giant strides, climbing ropes not secured at both ends, animal figure swings, multiple occupancy swings (with the exception of rotating tire swings), rope swings, and swinging dual exercise rings and trapeze bars.

In addition to equipment listed above, the following equipment is **not appropriate** for preschool children (ages 2-5): freestanding arch climbers, dome climbers, freestanding flexible climbers, fulcrum seesaws, log rolls, track rides, spiral slides more than one 360° turn, parallel bars, and

vertical sliding poles. Horizontal ladders and overhead rings are not appropriate for children 3 years and younger.

In addition to the equipment listed above, the following equipment is **not appropriate** for infants and toddlers (6 – 23 months): rung ladders, merry-go-rounds, rotating tire swings, spiral slides with a full 360° turn, balance beams.

Requirements for slides:

For preschool and school-age: The exit region of slides should be at least 11" long. The exit height of slides up to 4 ft. high should be 11" or less, and the exit height of slides over 4 ft. high should be at least 7" but not more than 15". The fall zone around slides should be at least 6 ft on all sides, except at the slide's exit. For slides up to 6 ft. high, the fall zone at the exit should be at least 6 ft. For slides greater than 6 ft., the fall zone at the exit should be at least as long as the slide is high up to 8 ft. max. The fall zone at a slide's exit should not overlap the fall zone of any other equipment.

For infants and toddlers: The exit region of slides should be 7" – 10" long, and the exit height should be 6" or less. The fall zone around slides should be at least 3 ft., except at the slide's exit, which should be at least 6 ft. The fall zone at a slide's exit should not overlap the fall zone of any other equipment.

Requirements for swings:

For preschool and school-age: **Belt swings** should have a pivot point of 8 ft. or less. There should be no more than 2 swings located within a single swing bay. The distance between swings at rest within a single bay should be at least 24", and the distance between a swing at rest and its support structure should be at least 30" (measured 5 ft. from the ground). The seat of swings for preschool-age children should rest at least 12" inches from the ground, and the seat of swings for school-age children should rest at least 16" from the ground. The fall zone for single-axis swings is 2 times the distance from the pivot point to the ground, both in front and back of swings, and cannot overlap the fall zone of any other equipment. A 6 ft. fall zone is required from the perimeter of the supporting structure. **Tire swings** should not be attached to composite structures and should not be suspended from a structure with other swings in the same bay. The bottom of the seat of the tire swing should rest at least 12" from the ground. The clearance between the seat and the sides of the support structure should be 30" when the tire is held in its closest position to the support structure. The fall zone for tire swings is the distance from the pivot point to the top of the tire plus 6 ft. in all directions, and should not overlap the fall zone of any other equipment. A 6 ft. fall zone is required from the perimeter of the tire swing's supporting structure.

For infants and toddlers: **Belt swings** should have a pivot point of 47" or less, and the seat should rest at least 6" from the ground. The fall zone for single-axis swings is 2 times the distance from the pivot point to the ground, both in front and back of swings and cannot overlap with the fall zone of any other equipment. A 3 ft. fall zone is required from the perimeter of the supporting structure. **Bucket swings** should have a pivot point between 47" and 95", and the seat should rest at least 24" from the ground. The fall zone for bucket swings is 2 times the distance from the pivot point to the bottom of the swing seat, both in front and back of swings and cannot overlap the fall zone of any other equipment. For both types of swings, there should be no more than 2 swings located within a single swing bay, and the distance between swings at rest within a single bay or between a swing at rest and its support structure should be at least 20" (measured 5 ft. from the ground).

Entanglement Hazards – There should be no dangerous pieces of hardware, such as protruding bolts or open S-hooks on swings that could entangle children's clothing, particularly drawstrings on the hoods of jackets or sweatshirts, and cause strangulation. An S-hook is considered closed if there is no gap or space greater than .04" (about the thickness of a dime).

Entrapment Hazards – Children can get trapped and strangle in openings in which they can fit their bodies but not their heads through the space. A completely bounded opening that is not bounded by the ground may pose an entrapment hazard. Even openings that are low enough for children's feet to touch the ground still present a strangulation risk because young children may not have the cognitive ability or motor skills to free themselves. Openings in guardrails and spaces between platforms, ladder rungs, and uprights in protective barriers on climbing equipment that measure more than 3.5" but less than 9" may be an entrapment hazard. Head and torso templates from the CPSC Handbook should be used to determine whether an opening presents an entrapment risk. Children can also become entrapped by angles (less than 55°) formed between 2 sides of playground parts, for instance at the top of a wooden picket fence or fort.

Pinch, Crush, and Shearing Hazards – Moving pieces of equipment, such as suspension bridges, track rides, merry-go-rounds, or seesaws, should not have accessible moving parts that might pinch or crush a child's finger or other body part.

Protrusion Hazards – There should be no sharp points, corners, or edges (either wooden or metal) on play equipment or other objects in the space (e.g., fences, gates) that could cut or puncture a child's skin. Protruding bolts on fences, gates, or equipment should not expose more than 2 threads.

Guardrails – A guardrail is an enclosing device around an elevated platform that is intended to prevent inadvertent falls from the platform. A child might be able to climb over, under, or through the guardrail. For preschoolers, guardrails are required for platforms higher than 20", and up to 30" above the ground. For preschoolers, the top edge of the guardrails should be at least 29" from the platform, and the lower edge should be between 9" and 23" from the platform. For equipment used *only* by school-aged children, any platform more than 30" above the ground (but not over 48" above the ground) will need guardrails at least 38" above the platform, with the lower edge between 9" and 28" from the platform.

Protective Barriers – A protective barrier is an enclosing device around an elevated platform that is intended to prevent both inadvertent falls from the platform and deliberate attempts to pass through the barrier. No child should be able to climb over, under, or through the barrier. For infants and toddlers, protective barriers are required for all equipment with play surfaces over 18", and the top surface of the barrier should be at least 24". For preschoolers, protective barriers are required for platforms that are over 30" above the ground, and the top surface of the barrier should be at least 29" above the platform. For equipment used *only* by school-aged children, any platform more than 48" above the ground requires protective barriers, and the top surface of the protective barrier must be at least 38" high. Guardrail and barrier recommendations do not apply if they would interfere with the intended use of the equipment, such as stepping up to the next level. For example, platforms that are layered on equipment, (e.g., one platform leading up to another in a step-like manner), do not need guardrails or barriers if the fall height between levels is 7" or less for toddlers, 20" or less for preschoolers, and 30" or less for school-agers.