



Standard Guide for ASTM Standards on Playground Surfacing¹

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1. Scope

1.1 This guide covers standards for selecting and specifying surface systems under and around playground equipment.

1.2 This guide describes how to apply existing ASTM standards to evaluate the impact attenuation, accessibility characteristics and product characteristics when selecting surfacing systems for use under and around playground equipment.

1.3 This guide does not imply that an injury cannot be incurred when the surface system complies with standards referred to in this guide.

1.4 The values stated in inch-pound units are to be regarded as standard. The SI units given in parentheses are for information only.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

F 963 Consumer Safety Specification for Toy Safety

F 1292 Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment

F 1487 Consumer Safety Performance Specification for Playground Equipment for Public Use

F 1918 Safety Performance Specification for Soft Contained Play Equipment

F 1951 Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment

F 2075 Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment

2.2 Canadian Standard:

CSA Z614 Children's Playspaces and Equipment³

2.3 Government Publications:

CPSC (US Consumer Product Safety Commission) Handbook for Public Playground Safety, Pub. No. 325⁴

US Code of Federal Regulations Part 3, 36 CFR Part 1191 Americans with Disabilities Act Accessibility Guidelines: Play Areas: (Final Rule)

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *acceleration*—the time rate of change of velocity.

3.1.2 *critical height*—the maximum height in full feet for a surfacing system that, when tested in accordance with Specification F 1292, no value shall exceed 200 *g*-max or 1000 HIC.

3.1.3 *deceleration*—the time rate of reduction of velocity.

3.1.4 *drop height*—the distance from which the instrumented headform is released to the surface.

3.1.5 *fall height*—the vertical distance between a designated play surface of the play equipment and the protective surfacing beneath it. In the case of swings, the vertical distance from the pivot point for the swinging element to the protective surface beneath it. The playground standard that has relevant jurisdiction should be consulted with relation to specific play structures.

3.1.6 *g*—acceleration due to gravity at the earth's surface at sea level (32 ft/s² (9.8 m/s²)).

3.1.7 *g-max*—the multiple of *g* that represents a maximum deceleration experienced during an initial impact.

3.1.8 *headform*—the striking part of testing apparatus.

3.1.9 *head injury criteria (HIC)*—a measure of impact severity that considers the duration over which the most critical section of the deceleration pulse persists as well as the peak level of deceleration.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Canadian Standards Association (CSA), 178 Rexdale Blvd., Toronto, ON Canada M9W1R3.

⁴ Available from the Consumer Product Safety Commission, Washington, DC 20207, website: www.cpsc.gov.