

VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

**Amusement Device Technical Advisory Committee (ADTAC)**

**Meeting – January 27, 2022 – 10:00 a.m.**

**1800 Sandy Hook Road Goochland, Virginia 23063  
AB Conference Room 270**

**AGENDA**

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II. Welcome New ADTAC Member Casey Littlefield and Michael Dellinger	
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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

**Amusement Device Technical Advisory Committee - 2021 Code Change Cycle**

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# VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

## **Amusement Device Technical Advisory Committee**

### Summary Minutes of the June 24, 2019 Meeting – Virginia Housing Center

Committee members present: Brian Gentilini, Chairman, Danny Abner, Wayne Fuqua, and Victor Purchase.

DHCD Staff present: Cindy Davis, Jeff Brown, Richard Potts, Travis Luter, and Thomas King

Others present: Neil Holland, Andy Marchetti, Casey Littlefield, Ken Martin, Randy Smith, Senator Adam Ebbin, Henry Watkins, Pete Pidcoe, Ralph Daniel, Laurence Actenburg III, and Rod Rick Moore.

The Chairman called the meeting to order at approximately 10:00 a.m.

Mr. Gentilini welcomed new member Wayne Fuqua to the ADTAC and invited everyone in attendance to introduce themselves.

The Chairman opened the floor for the first item on the agenda concerning ASTM Standard F2970-17 and code change proposal AD30-18, submitted by Ron Clements on behalf of Senator Ebbin.

- Senator Ebbin provided a summary of his concerns with trampoline parks and the dangers they pose to the citizens of the Commonwealth.
- Laurence Actenburg III offered a summarization of his personal experience with a trampoline park and the devastating injuries he sustained while at the park. Mr. Actenburg provided some statistics related to trampoline parks and the plethora of injuries individuals sustain which occur at trampoline parks.
- Pete Pidcoe of VCU provided insight into the design of trampolines and trampoline systems. Mr. Pidcoe offered his calculations and findings on how a trampoline system works and the materials they are made of as well as the energy transfer, energy relationship, and diaphragm effect of a trampoline system. Casey Littlefield asked Mr. Actenburg how he felt ASTM Standard F2970-17 would have helped his situation, to which he replied it would be a starting point for oversight of trampoline parks; it would be better than nothing.
- Ralph Daniel from Boomerang Air Sports spoke of trampoline design and training for staff and patrons. He stated that he would like to see Virginia become more regulated, more strict like Pennsylvania.

After further discussion it was generally agreed upon to recommend approval of proposed code change AD30-18, which is needed, and should be included in the 2018 VADR.

The Chairman then opened the floor for discussion of the next agenda item concerning ASTM Standard F2461-18 and the code change proposal AD40-18. After discussion it was generally agreed upon to recommend approval of proposed code change AD 40-18, which is needed, and should be included in the 2018 VADR.

The Chairman then opened the floor for discussion of the next agenda item concerning ASTM Standard F2960-16. After discussion it was generally agreed upon that ASTM Standard F2960-16 needed to be added to the 2018 VADR. DHCD staff will draft a code change proposal to present to the ADTAC at the next meeting.

The Chairman then opened the floor for discussion of the next agenda item concerning ASTM Standard F3054-18. After discussion it was generally agreed upon that ASTM Standard F3054-18 needed to be added to the 2018 VADR. DHCD staff will draft a code change proposal to present to the ADTAC at the next meeting.

The Chairman then opened the floor for discussion of the next agenda item concerning Go Kart permitting and fees. Ken Martin indicated an adequate inspection of a Go Kart takes approximately 30 minutes and that Go Kart tracks are getting large and including more and more karts; therefore, the inspections are taking longer to perform. He suggested a permit fee of \$55 per Go Kart. This discussion led to a discussion on amusement device permit fees in general including how the fees could be added to the VADR (law or code change) and whether to allow jurisdictions to establish the fees. The ADTAC members generally agreed to defer any final decision on a recommendation to the BHCD until more research was done.

The Chairman then opened the floor for discussion of the next agenda item concerning ANSI/ACCT 03-2016 Standard. Randy Smith provided information on the standard as it related to aerial adventures such as challenge courses and zip lines. The ADTAC members generally agreed to defer any final decision on a recommendation to the BHCD until more research was done.

There being no other business, the meeting was adjourned at approximately 12:45 p.m.

Existing Standard Number and Title	New (current, revised or withdrawn) Standard Number and Title
<b>ANSI Standard No. B77.1-2017</b> Passenger Ropeways – Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors – Safety Standard.	(Same as existing)
<b>F747-15</b> Standard Terminology Relating to Amusement Rides and Devices	<b>F747-21a</b> Standard Terminology Relating to Amusement Rides and Devices
<b>F770-18</b> Standard Practice for Ownership, Operation, Maintenance, and Inspection of Amusement Rides and Devices	<b>F770-21a</b> Standard Practice for Ownership, Operation, Maintenance, and Inspection of Amusement Rides and Devices
<b>F1159-16</b> Standard Practice for Design of Amusement Rides and Devices that are Outside the Purview of Other F24 Design Standards	<b>F1159-16e1</b> Standard Practice for Design of Amusement Rides and Devices that are Outside the Purview of Other F24 Design Standards
<b>F1193-18</b> Standard Practice for Quality, Manufacture, and Construction of Amusement Rides and Devices	<b>F1193-18a</b> Standard Practice for Quality, Manufacture, and Construction of Amusement Rides and Devices
<b>F1957-99 (2017)</b> Standard Test Method for Composite Foam Hardness-Durometer Hardness	(Same as existing)
<b>F2007-18</b> Standard Practice for Design, Manufacture, and Operation of Concession Go-Karts and Facilities	(Same as existing)
<b>F2137-18</b> Standard Practice for Measuring the Dynamic Characteristics of Amusement Rides and Devices	<b>F2137-19</b> Standard Practice for Measuring the Dynamic Characteristics of Amusement Rides and Devices
<b>F2291-19</b> Standard Practice for Design of Amusement Rides and Devices	<b>F2291-21</b> Standard Practice for Design of Amusement Rides and Devices
<b>F2374-19</b> Standard Practice for Design, Manufacture, Operation, and Maintenance of Inflatable Amusement Devices	<b>F2374-21a</b> Standard Practice for Design, Manufacture, Operation, and Maintenance of Inflatable Amusement Devices

<b>F2375-09 (2017)</b> Standard Practice for Design, Manufacture, Installation and Testing of Climbing Nets and Netting/Mesh used in Amusement Rides, Devices, Play Areas and Attractions	(Same as existing)
<b>F2376-17a</b> Standard Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems	<b>F2376-21a</b> Standard Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems
<b>F2460-18</b> Standard Practice for Special Requirements for Bumper Boats	<b>F2460-19</b> Standard Practice for Special Requirements for Bumper Boats
<b>F2461-218</b> Standard Practice for Manufacture, Construction, Operation, and Maintenance of Aquatic Play Equipment	<b>F2461-20a</b> Standard Practice for Manufacture, Construction, Operation, and Maintenance of Aquatic Play Equipment
<b>F2959-18</b> Standard Practice for Aerial Adventure Courses	<b>F2959-21</b> Standard Practice for Aerial Adventure Courses
<b>F2960-16</b> Standard Practice for Permanent Amusement Railway Ride Tracks and Related Devices	(Same as existing)
<b>F2970-17</b> Standard Practice for Design, Manufacture, Installation, Operation, Maintenance, Inspection and Major Modification of Trampoline Courts	<b>F2970-2</b> Standard Practice for Design, Manufacture, Installation, Operation, Maintenance, Inspection and Major Modification of Trampoline Courts
<b>F2974-19</b> Standard Guide for Auditing Amusement Rides and Devices	<b>F2974-20</b> Standard Guide for Auditing Amusement Rides and Devices
<b>F3054-18</b> Standard Practice for Operations of Amusement Railway Rides, Devices, and Facilities	(Same as existing)

<b>Consideration of ASTM F24 Committee Standards Not in Current VADR</b>	
<b>F1487-21</b> Standard Consumer Safety Performance Specification for Playground Equipment for Public Use	
<b>F3158-21</b> Standard Practice for Patron Transportation Conveyors Used with a Water Related Amusement Ride or Device	

<b>F3214-18</b> Standard Practice for Characterization of Fire Properties of Materials Specified for Vehicles Associated with Amusement Rides and Devices
<b>F2375-09</b> Standard Practice for Design, Manufacture, Installation and Testing of Climbing Nets and Netting/Mesh used in Amusement Rides, Devices, Play Areas and Attractions
<b>F1918-21</b> Standard Safety Performance Specification for Soft Contained Play Equipment
<b>F3133-21</b> Standard Practice for Classification, Design, Manufacture, Construction, Maintenance, and Operation of Stationary Wave Systems
<b>Other Standards Not in Current VADR (not for consideration)</b>
<b>F2783-20</b> Standard Practice for Design, Manufacture, Operation, Maintenance, and Inspection of Amusement Rides and Devices, in Canada
<b>F3168-20a</b> Standard Practice for Hayride Attractions

2. Zip lines; and
3. Trampoline courts.

**B. The following equipment or devices shall not be considered amusement devices subject to this chapter:**

1. Nonmechanized playground or recreational equipment such as swing sets, sliding boards, climbing bars, jungle gyms, skateboard ramps and similar equipment where no admission fee is charged for its use or for admittance to areas where the equipment is located;
2. Coin-operated rides designed to accommodate three or less passengers;
3. Water slides or similar equipment used in community association, community club or community organization swimming pools;
4. Mechanical bulls or similar devices;
5. Devices known as mall trains, shopping mall trains, or electric trackless trains for malls; and
6. Devices known as water walking balls, euro bubbles, or similar devices.

**13VAC5-31-40. Incorporated standards.**

**A.** The following standards are hereby incorporated by reference for use as part of this chapter:

1. American National Standards Institute (ANSI) Standard B77.1-2017 for the regulation of passenger tramways; and
2. American Society for Testing and Materials (ASTM) Standard Nos. F747-15, F770-18, F1159-16, F1193-18, F1957-99 (2017), F2007-18, F2137-18, F2291-19, F2374-19, F2375-09 (2017), F2376-17a, F2460-11, F2461-18, F2959-18, F2960-16, F2970-17, F2974-19, and F3054-18 for the regulation of amusement devices.

The standards referenced above may be procured from:

ANSI 25 W 43rd Street New York, NY 10036	ASTM 100 Barr Harbor Dr. West Conshohocken, PA 19428-2959
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**B.** The provisions of this chapter govern where they are in conflict with any provisions of the standards incorporated by reference in this chapter.

**C.** The following requirements supplement the provisions of the ASTM standards incorporated by reference in this chapter:

1. The operator of an amusement device shall be at least 16 years of age, except when the person is under the supervision of a parent or guardian and engaged in activities determined not to be hazardous by the Commissioner of the Virginia Department of Labor and Industry;
2. The amusement device shall be attended by an operator at all times during operation except that (i) one operator is permitted to operate two or more amusement devices provided they are within the sight of the operator and operated by a common control panel or station and (ii) one operator is permitted to operate two small mechanical rides with separate controls provided the distance between controls is no more than 35 feet and the controls are equipped with a positive pressure switch; and
3. The operator of an amusement device shall not be (i) under the influence of any drugs which may affect the operator's judgment or ability to assure the safety of the public or (ii) under the influence of alcohol.





## Standard Terminology Relating to Amusement Rides and Devices<sup>1</sup>

This standard is issued under the fixed designation F 747; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

**accepted engineering practice**—that which conforms to accepted principles, tests, or standards of nationally recognized technical or scientific authorities.

**air-supported structure**—an amusement device that incorporates a structural and mechanical system and employs a high-strength fabric or film that achieves its strength, shape, and stability by pretensioning with internal air pressure, all of which are intended to provide an enclosed area for the self enjoyment of those so confined within.

**amusement ride or amusement device**—a device or combination of devices or elements that carry, convey, or direct a person(s) over or through a fixed or restricted course or within a defined area, for the primary purpose of amusement or entertainment.

**carnival**—a mobile enterprise principally devoted to offering amusement or entertainment to the public in, upon, or by means of portable amusement rides or devices or temporary structures in any number or combination, whether or not associated with other structures or forms of public attraction.

**circular ride**—an amusement ride whose motion is primarily rotary in a fixed or variable plane from horizontal to 45° above horizontal.

**control access system**—a device, barrier or mechanism that prohibits unauthorized activation of a ride or device control system.

**fence**—a type of barrier consisting of, but not limited to, posts, boards, wire, stakes, or rails that is used to inhibit patrons from coming into contact with the moving portion or restricted portion of an amusement ride or device.

**flat-ride**—an amusement ride that operates on a single level whether over a controlled, fixed course or track, or confined to a limited area of operation.

**high ride**—an amusement ride whose motion is in a fixed or variable plane from horizontal to vertical.

**illness**—personal discomfort resulting in treatment including a personal illness, food poisoning, drug abuse, toxic inhalation, insect sting, or other similar occurrence.

**injury**—sustained bodily harm resulting in treatment such as trauma, cuts, bruises, burns, and sprains.

**installation or erection**—the actual act of onsite construction or the physical setting up and making ready for use of a ride or device.

**kiddie ride**—an amusement ride designed primarily for use by children up to 12 years of age.

**major modification**—any change in either the structural or operational characteristics of the ride or device which will alter its performance from that specified in the manufacturer's design criteria.

**minor injuries/illnesses**—injuries and illnesses which may or may not require emergency first aid or significant treatment, or both, but cannot be otherwise classified as a serious injury or illness. This category includes incidents where treatment is limited to such things as the dispensation of over-the-counter medication or plastic adhesive strips, cleansing, rest, and other similar duties or assistance.

**minor modification**—any change that does not alter the structural or operational characteristics of the ride or device nor change its performance from that specified in the manufacturer's design criteria.

**operator**—the person having direct control of the starting, stopping, or speed of an amusement ride.

**prototype**—final operational assembly of a newly developed ride or device.

**serious injuries/illnesses**—a personal injury/illness that results in death, dismemberment, significant disfigurement, permanent loss of the use of a body organ, member, function, or system, a compound fracture, or other significant injury/illness that requires immediate admission and overnight hospitalization and observation by a licensed physician.

**unscheduled cessation**—a rare, unusual, or irregular stopping of an amusement ride operation, intentional or otherwise, that is considered abnormal or potentially hazardous in nature, or both, due to its cause, method, or result.

<sup>1</sup> This terminology is under the jurisdiction of ASTM Committee F24 on Amusement Rides and Devices and is the direct responsibility of Subcommittee F24.20 on Specifications and Terminology.

Current edition approved Feb. 1, 2006. Published February 2006. Originally approved in 1982. Last previous edition approved in 2005 as F 747 – 05.

**Department Of Housing And Community Development**  
Base Document for the 2021 Virginia Amusement Device Regulations  
09/30/2021

**Summary** – This document is compiled by staff of the State Building Codes Office of the Division of Building and Fire Regulation. The staff document is intended to serve as the basis for the publishing of proposed regulations for the 2021 VADR. It is not intended to create substantive changes to the regulations. Standards that are referenced are updated to the newest edition and editorial corrections are made where existing errors have been identified. Once the base document is approved by the Board of Housing and Community Development, if any code change proposals are considered and approved by the Board of Housing and Community Development to also go into the proposed regulations for the 2021 VADR, those proposals would be correlated with this base document and brought back to the Board of Housing and Community Development as a separate “proposed regulations” document for review.

Part I

General Provisions

**13VAC5-31-10. Purpose.**

A. The purpose of this chapter is to establish standards for the regulation, design, construction, maintenance, operation, and inspection of amusement devices.

B. The provisions of the USBC, including but not limited to all administrative procedures shall apply in the administration and enforcement of this chapter and to amusement devices to the extent such provisions are not superseded by the provisions of this chapter.

**13VAC5-31-20. Definitions.**

A. The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Amusement device" means (i) a device or structure open to the public by which persons are conveyed or moved in an unusual manner for diversion, but excluding snow tubing parks and rides, ski terrain parks, ski slopes, and ski trails, and (ii) passenger tramways. For the purpose of this definition, the phrase "open to the public" means that the public has full access to a device or structure at an event, irrespective of whether a fee is charged. The use of devices or structures at private events is not considered to be open to the public.

"Bungee cord" means the elastic rope to which the jumper is attached which lengthens and shortens to produce a bouncing action.

"Carabineer" means a shaped metal device with a gate used to connect sections of a bungee cord, jump rigging, equipment, or safety gear.

"Certificate of inspection" means the certificate or sticker for amusement devices distributed by DHCD.

"DHCD" means the Virginia Department of Housing and Community Development.

"Gravity ride" means a ride that is installed on an inclined surface, which depends on gravity for its operation to convey a passenger from the top of the incline to the bottom, and which conveys a passenger in or on a carrier tube, bag, bathing suit, or clothes.

"Ground operator" means a person who assists the jump master to prepare a jumper for jumping.

"Harness" means an assembly to be worn by a bungee jumper to be attached to a bungee cord. It is designed to prevent the wearer from becoming detached from the bungee system.

"Institutional trampoline" means a trampoline intended for use in a commercial or institutional facility.

"Jump master" means a person who has responsibility for the bungee jumper and who takes the jumper through the final stages to the actual jump.

"Jump zone" means the space bounded by the maximum designed movements of the bungee jumper.

"Jumper" means the person who departs from a height attached to a bungee system.

"Landing area" means the surface area of ground or water directly under the jump zone, the area where the lowering device moves the bungee jumper to be landed away from the jump space and the area covered by the movement of the lowering device.

"Local building department" means the agency or agencies of the governing body of any city, county or town in this Commonwealth charged with the enforcement of the USBC.

"Operating manual" means the document that contains the procedures and forms for the operation of bungee jumping equipment and activity at a site.

"Passenger tramway" means a device used to transport passengers uphill, and suspended in the air by the use of steel cables, chains or belts, or ropes, and usually supported by trestles or towers with one or more spans.

"Platform" means the equipment attached to the structure from which the bungee jumper departs.

"Private inspector" means a person performing inspections who is independent of the company, individual or organization owning, operating or having any vested interest in an amusement device being inspected.

"Small mechanical ride" means an amusement device, other than an inflatable amusement device, where (i) the assembly time for the device is two hours or less, (ii) the revolutions per minute of any rotation of the components of the device is not greater than seven, (iii) the device has a footprint of less than 500 square feet, and (iv) the device does not invert a patron or lift a patron more than three feet in the air, measured from the ground to the bottom of the patron's feet when the device is operating.

"Trampoline court" means a defined area comprising one or more institutional trampolines or a series of institutional trampolines.

"Ultimate tensile strength" means the greatest amount of load applied to a bungee cord prior to failure.

"USBC" means the Virginia Uniform Statewide Building Code (13VAC5-63).

B. Words and terms used in this chapter which are defined in the USBC shall have the meaning ascribed to them in that regulation unless the context clearly indicates otherwise.

C. Words and terms used in this chapter which are defined in the standards incorporated by reference in this chapter shall have the meaning ascribed to them in those standards unless the context clearly indicates otherwise.

### **13VAC5-31-30. Devices covered and exempt.**

A. The following devices, identified by name or description, when open to the public shall be considered amusement devices subject to this chapter. The list is intended only to clarify questionable devices, while the definition of an "amusement device" in 13VAC5-31-20 is generally used to determine the applicability of this chapter.

1. Inflatable amusement devices;

2. Zip lines; and
3. Trampoline courts.

B. The following equipment or devices shall not be considered amusement devices subject to this chapter:

1. Nonmechanized playground or recreational equipment such as swing sets, sliding boards, climbing bars, jungle gyms, skateboard ramps and similar equipment where no admission fee is charged for its use or for admittance to areas where the equipment is located;
2. Coin-operated rides designed to accommodate three or less passengers;
3. Water slides or similar equipment used in community association, community club or community organization swimming pools;
4. Mechanical bulls or similar devices;
5. Devices known as mall trains, shopping mall trains, or electric trackless trains for malls; and
6. Devices known as water walking balls, euro bubbles, or similar devices.

**13VAC5-31-40. Incorporated standards.**

A. The following standards are hereby incorporated by reference for use as part of this chapter:

1. American National Standards Institute (ANSI) Standard B77.1-2017 for the regulation of passenger tramways; and
2. American Society for Testing and Materials (ASTM) Standard Nos. F747-15, F770-18, F1159-16, F1193-18, F1957-99 (2017), F2007-18, F2137-18, F2291-19, F2374-19, F2375-09 (2017), F2376-17a, F2460-11, F2461-18, F2959-18, F2960-16, F2970-17, F2974-19, and F3054-18 for the regulation of amusement devices.

The standards referenced above may be procured from:

ANSI 25 W 43rd Street New York, NY 10036	ASTM 100 Barr Harbor Dr. West Conshohocken, PA 19428-2959
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B. The provisions of this chapter govern where they are in conflict with any provisions of the standards incorporated by reference in this chapter.

C. The following requirements supplement the provisions of the ASTM standards incorporated by reference in this chapter:

1. The operator of an amusement device shall be at least 16 years of age, except when the person is under the supervision of a parent or guardian and engaged in activities determined not to be hazardous by the Commissioner of the Virginia Department of Labor and Industry;
2. The amusement device shall be attended by an operator at all times during operation except that (i) one operator is permitted to operate two or more amusement devices provided they are within the sight of the operator and operated by a common control panel or station and (ii) one operator is permitted to operate two small mechanical rides with separate controls provided the distance between controls is no more than 35 feet and the controls are equipped with a positive pressure switch; and
3. The operator of an amusement device shall not be (i) under the influence of any drugs which may affect the operator's judgment or ability to assure the safety of the public or (ii) under the influence of alcohol.

D. Where an amusement device was manufactured under previous editions of the standards incorporated by reference in this chapter, the previous editions shall apply to the extent that they are different from the current standards.

**13VAC5-31-50. Certification of amusement device inspectors.**

Any person, including local building department personnel, inspecting an amusement device relative to a certificate of inspection shall possess certification as an amusement device inspector in accordance with the Virginia Certification Standards (13VAC5-21).

Note: Continuing education and periodic training requirements for DHCD certifications are set out in the Virginia Certification Standards (13VAC5-21).

**13VAC5-31-60. Appeals.**

Appeals from the local building department concerning the application of this chapter shall be made to the local board of building code appeals established by the USBC. Application for appeal shall be filed with the local building department within 14 calendar days after receipt of the decision of the local building department. The board of appeals shall hear the appeal within seven calendar days after the application for appeal is filed. After final determination by the board, any person who was a party to the appeal may appeal to the State Building Code Technical Review Board, established under § 36-108 of the Code of Virginia, within 14 calendar days of receipt of the decision to be appealed. Such appeal shall be in accordance with the procedures established in the USBC, under the authority granted by § 36-98.3 of the Code of Virginia where the provisions of Chapter 6 (§ [36-97](#) et seq.) of Title 36 of the Code of Virginia and the USBC apply to amusement devices.

NOTE: Because of the short time frames normally associated with amusement device operations, DHCD staff will be available to assist in finding a timely resolution to disagreements between owners or operators and the local building department upon request by either party.

Part II

Enforcement, Permits and Certificates of Inspection

**13VAC5-31-75. Local building department.**

A. In accordance with §§ 36-98.3 and 36-105 of the Code of Virginia, the local building department shall be responsible for the enforcement of this chapter and may charge fees for such enforcement activity. The total amount charged for any one permit to operate an amusement device or devices or the renewal of such permit shall not exceed the following, except that when a private inspector is used by the owner or operator of the device, the fees shall be reduced by 75%:

1. \$55 for each small mechanical ride or inflatable amusement device covered by the permit;
2. \$75 for each circular ride, institutional trampoline, or flat-ride less than 20 feet in height covered by the permit, except concession go-karts.

Concession go-kart fees shall not exceed \$300 per track, for tracks with up to 20 karts. An additional fee of up to \$10 may be charged for each additional kart in excess of 20;

3. \$100 for each spectacular ride covered by the permit that cannot be inspected as a circular ride or flat-ride in subdivision 2 of this subsection due to complexity or height, except zip lines. Zip line fees shall not exceed \$150 for each zip line. For the purposes of this section, each portion from launch point to landing point shall be considered a separate zip line and each zip line between a launch point and landing point shall also be considered a separate zip line;
4. \$200 for each coaster covered by the permit that exceeds 30 feet in height;

5. \$400 for each coaster covered by the permit that exceeds 60 feet in height; and

6. The local building department may charge an additional fee for permits and inspections of generators and associated wiring for amusement device events. Generators subject to these fees are those used exclusively with amusement devices and that are inspected by the local building department. The fee per event shall not exceed \$165 and shall not exceed the actual cost to perform the inspection or inspections.

Exception: Small portable generators serving only cord and plug connected equipment loads are not subject to the fee.

Notwithstanding the fee limitations established in this section, the local building department shall be permitted to increase the fees up to 50% when requested to perform weekend or after-hour inspections. The local building department shall also be permitted to increase fees up to 50% when a reinspection is required.

B. Notwithstanding the provisions of subsection A of this section, when an amusement device is constructed in whole or in part at a site for permanent operation at that site and is not intended to be disassembled and moved to another site, then the local building department may utilize permit and inspection fees established pursuant to the USBC to defray the cost of enforcement. This authorization does not apply to an amusement device that is only being reassembled, undergoing a major modification at a site or being moved to a site for operation.

C. A permit application shall be made to the local building department at least five days before the date in which the applicant intends to operate an amusement device. The application shall include the name of the owner, operator or other person assuming responsibility for the device, a general description of the device including any serial or identification numbers available, the location of the property on which the device will be operated, and the length of time of operation. The permit application shall indicate whether a private inspector will be used. If a private inspector is not used, the applicant shall give reasonable notice when an inspection is sought and may stipulate the day such inspection is requested provided it is during the normal operating hours of the local building department. In addition to the information required on the permit application, the applicant shall provide proof of liability insurance of an amount not less than \$1 million per occurrence or proof of equivalent financial responsibility. The local building department shall be notified of any change in the liability insurance or financial responsibility during the period covered by the permit.

D. Notwithstanding the provisions of subsection C of this section, a permit application is not required for a small mechanical ride or an inflatable amusement device that has a certificate of inspection issued by any local building department in this Commonwealth either a six-month period for small mechanical rides or within a one-year period for inflatable amusement devices prior to the dates the small mechanical ride or inflatable amusement device is to be used, regardless of whether the devices has been disassembled and moved to a new site. In such cases, the local building department shall be notified and provided with the information required on a permit application as listed in subsection C of this section at least three days prior to operation. In addition, and notwithstanding the provisions of subsection A of this section, the local building department shall be permitted to charge a \$50 inspection fee per event to the person notifying the local building department of an event where an inflatable amusement device is operating if the local building department chooses to inspect any or all of the inflatable amusement devices operating at that event. An inspection report shall be provided to the person notifying the local building department of the event if such an inspection is conducted.

E. Local building department personnel shall examine the permit application within five days and issue the permit if all requirements are met. A certificate of inspection for each amusement device shall be issued when the device has been found to comply with this chapter by a private inspector or by an inspector from the local building department. It shall be the responsibility of the

local building department to verify that the private inspector possesses a valid certificate of competence as an amusement device inspector from the Virginia Board of Housing and Community Development. In addition, local building department personnel shall be responsible for assuring that the certificate of inspection is posted or affixed on or in the vicinity of the device in a location visible to the public. Local building department personnel shall post or affix such certificates or permit the certificates to be posted or affixed by the private inspector. Permits shall indicate the length of time the device or devices will be operated at the site, clearly identify the device or devices to which it applies and the date of expiration of the permit. Permits shall not be valid for longer than one year, except that permits for small mechanical rides shall not be valid for longer than six months.

F. In addition to obtaining a certificate of inspection in conjunction with a permit application for amusement devices permanently fixed to a site, a new certificate of inspection shall also be obtained prior to the operation of an amusement device following a major modification, prior to each seasonal operation of a device, at least once during the operating season and prior to resuming the operation of a device following an order from a local building department to cease operation. This requirement shall not apply to small mechanical rides meeting the conditions outlined in subsection D of this section.

G. For amusement devices manufactured prior to 1978, the owner or operator shall have the information required by 10.1 through 10.6 of ASTM F1193 available at the time of inspection. In addition, the operator of any amusement device shall be responsible for obtaining all manufacturer's notifications, service bulletins and safety alerts issued pursuant to ASTM F770 and the operator shall comply with all recommendations and requirements set out in those documents. A copy of all such documents shall be made available during an inspection.

H. In the enforcement of this chapter, local building department personnel shall have authority to conduct inspections at any time an amusement device would normally be open for operation or at any other time if permission is granted by the owner or operator, to issue an order to temporarily cease operation of an amusement device upon the determination that the device may be unsafe or may otherwise endanger the public and to accept and approve or deny requests for modifications of the rules of this chapter in accordance with the modification provisions of the USBC.

I. In accordance with subdivision 7 of § 36-137 of the Code of Virginia, the local building department shall collect a 2.0% levy of fees charged for permits under this chapter and transmit it quarterly to DHCD to support training programs of the Virginia Building Code Academy. Localities that maintain individual or regional training academies accredited by DHCD shall retain such levy.

J. In accordance with § 36-98.3 of the Code of Virginia and 13VAC5-31-10 B, the procedures for violations of this chapter shall be as prescribed in the USBC.

K. In accordance with § 36-98.1 of the Code of Virginia, the Virginia Department of General Services (DGS) shall function as the local building department for the application of this chapter to amusement devices located on state-owned property. In accordance with §§ 36-98.2 and 36-114 of the Code of Virginia, appeals of the application of this chapter by the DGS shall be made directly to the State Building Code Technical Review Board. Further, as a condition of this chapter, such appeals shall be filed within 14 calendar days after receipt of the decision of DGS.

#### **13VAC5-31-85. Accidents involving serious injury or death.**

A. If an accident involving the serious injury or death of a patron occurs, the operation of an amusement device shall cease and the local building department and DHCD shall be notified as soon as practicable, but in no case later than during the next working day. The operation of the device shall not resume until inspected by a private inspector or an inspector from the local

building department, except where the owner or operator determines the cause was not related to malfunction or improper operation of the amusement device.

B. The owner or operator shall conduct an investigation of the accident including, at a minimum, an examination of the accident scene and interviews of any witnesses or persons involved in the accident. An accident investigation report shall be compiled which, at a minimum, shall contain a summary of the investigation and a description of the device involved, including its serial number and date of manufacture, if available. The report shall be submitted to the local building department within 24 hours of the accident except that if the local building department is closed during that period, then the report shall be submitted with four hours of the reopening of the department.

C. Local building department personnel are authorized to investigate the accident and to issue an order to cease operation when warranted and to specify the conditions under which the device may resume operation. The amusement device shall be inspected prior to resuming operation either by an inspector from the local building department or by a private inspector and found to comply with this chapter.

### Part III

#### Gravity Rides

##### **13VAC5-31-180. General requirements.**

A. The provisions of this part are specific to gravity rides and are in addition to other applicable provisions of this chapter.

B. A ride using carriers shall be designed and constructed to retain the passengers in or on a carrier during the operation of the ride and retain the carrier on or within the track, slide, or chute system during the operation of the ride.

C. A ride that conveys passengers not in or on a carrier shall be designed and constructed to retain the passengers within the chute or slide during the ride.

D. At each loading or unloading area, a hard surface which is other than earth and which is reasonably level shall be provided. The surface shall be large enough to accommodate the intended quantity of passengers.

E. Where loading or unloading platforms are elevated more than 30 inches from the adjacent areas, guard rails conforming to the USBC shall be provided.

F. Passengers shall not have to step up or down more than 12 inches from the loading or unloading surface to enter or exit the ride.

G. The frequency of departure of carriers or riders from the loading areas shall be controlled by a ride operator. The minimum distance between departures shall be determined by the designer of the specific ride.

H. When a passenger has control of the speed or course of the carrier, the passenger shall have a clear sight distance along the course of the ride long enough to allow the passenger to avoid a collision with another person or carrier.

I. The unloading area of the ride shall be designed and constructed to bring riders and carriers to a safe stop without any action by the rider.

J. There shall be attendants at the loading and unloading area when the ride is in use. However, where the physical structure of the ride is such that it is not capable of accommodating an attendant at both the loading and unloading area and the entire ride is visible and under the supervision of a single attendant, attendants at both the loading and unloading areas shall not be required.



K. If the entire course of the ride is not visible to the operator, additional persons with communications equipment shall be provided or approved visual surveillance equipment shall be installed along the course of the ride which is not visible to the operator.

L. Any moving or hot parts that may be injurious to the ride operator or the public shall be effectively guarded to prevent contact.

M. Fencing or adequate clearance shall be provided that will prevent the riders from contact with persons or nearby objects.

#### Part IV

##### Concession Go-Karts

#### **13VAC5-31-190. General requirements.**

In addition to other applicable requirements of this chapter, concession go-karts shall be operated, maintained and inspected in accordance with ASTM F2007.

#### Part V

##### Inflatable Amusement Devices

#### **13VAC5-31-200. General requirements.**

In addition to other applicable requirements of this chapter, inflatable amusement devices shall be operated, maintained and inspected in accordance with ASTM F2374.

#### Part VI

##### Artificial Climbing Walls

#### **13VAC5-31-210. General requirements.**

In addition to other applicable requirements of this chapter, artificial climbing walls shall be operated, maintained and inspected in accordance with ASTM F1193.

Notwithstanding any requirements of this chapter to the contrary, an artificial climbing wall may be moved, setup and operated without obtaining a permit provided the wall has a certificate of inspection issued by a local building department in this Commonwealth within the prior 90 days and the expiration date of the wire ropes used with the device does not expire within that 90-day period.

#### Part VII

##### Bumper Boats

#### **13VAC5-31-215. General requirements.**

In addition to other applicable requirements of this chapter, bumper boats shall be operated, maintained and inspected in accordance with ASTM F2460.

#### Part VIII

##### Zip Lines

#### **13VAC5-31-217. General requirements.**

In addition to other applicable requirements of this chapter, zip lines shall be operated, maintained, and inspected in accordance with ASTM F2959.

## Part IX

### Bungee Jumping

#### **13VAC5-31-220. General requirements.**

A. The provisions of this part are specific to bungee jumping and are in addition to other applicable provisions of this chapter.

B. Bungee jumping operations that are open to the public shall be permitted from structures designed for use as part of the bungee jumping operation. Bungee jumping from other types of structures, cranes or derricks is not permitted for public participation.

C. Bungee jumping activities that involve double jumping, sandbagging, catapulting or stunt jumping shall not be permitted to be open for public participation.

#### **13VAC5-31-230. Bungee cords.**

A. Bungee cords shall be tested by an approved testing agency or by an engineer licensed in Virginia. The following criteria shall be met:

1. Each lot of bungee cords shall have a minimum of 10%, but not less than one of the cords tested to determine the lowest ultimate tensile strength of the cords tested. A load versus elongation curve based on the test result shall be provided with each lot of bungee cords; and
2. The manufacturer shall specify the maximum number of jumps for which each cord or cord type is designed and the criteria for use of the cord.

B. Bungee cords shall be retired when the cords (i) exhibit deterioration or damage; (ii) do not react according to specifications; or (iii) have reached the maximum usage expressed in number of jumps as specified by the manufacturer. Bungee cords retired from use shall be destroyed immediately by cutting the cord into five-foot lengths.

#### **13VAC5-31-240. Jump hardware.**

Jump harnesses shall be either full body-designed, which includes a waist harness worn in conjunction with a chest harness, or ankle-designed with a link to a waist harness. All jump harnesses, carabineers, cables and other hardware shall be designed and manufactured for the purpose or designed or analyzed by an engineer licensed in Virginia and shall be used and maintained in accordance with the manufacturer's or engineer's instructions.

#### **13VAC5-31-250. Structure requirements.**

Structures constructed on site for bungee jumping activities shall be designed by an engineer licensed in Virginia. Structures manufactured for bungee jumping activities shall be analyzed by an engineer licensed in Virginia and assembled and supported in accordance with the manufacturer's instructions.

#### **13VAC5-31-260. Operational and site requirements.**

A. Operators shall follow the criteria provided by the manufacturer for the use of bungee cords. A record of the number of jumps with each cord shall be maintained. All cords shall be inspected daily for wear, slippage, or other abnormalities unless the manufacturer specifies more frequent inspections.

B. The jump master or site manager shall be responsible for determining the appropriate use of all bungee cords in relation to the weight of the jumper and height of the platform. Bungee cords shall be attached to the structure at all times when in the connection area.

C. All harnesses shall be inspected prior to harnessing a jumper and shall be removed from service when they exhibit signs of excessive wear or damage. All carabineers shall be inspected daily and shall be removed from service when they exhibit signs of excessive wear or damage or

fail to function as designed. The anchors shall be inspected daily and shall be replaced if showing signs of excessive wear.

D. A secondary retrieval system shall be provided in all operations. A locking mechanism on the line shall be used to stop and hold the jumper in place after being pulled back to the jump platform in a retrieval system. A dead man's switch or locking mechanism that will stop the lowering action shall be used in a friction lowering system.

E. The jump zone, preparation area and landing/recovery area shall be identified and maintained during bungee jumping activities. The landing/recovery area shall be accessible to emergency vehicles. Communication shall be maintained between all personnel involved with the jump.

F. An air bag, a minimum of 10 feet by 10 feet, shall be used. The air bag shall be rated for the maximum free fall height possible from the platform during operation. The air bag shall be located immediately below the jump space. The landing area shall be free of spectators and debris at all times and shall be free of any equipment or personnel when a jumper is being prepared on the jump platform and until the bungee cord is at its static extended state. A place to sit and recover shall be provided adjacent to, but outside, the landing area where the jumper shall be allowed to recover.

G. Where the jump space or landing area, or both, is over sea, lake, river, or harbor waters, the following shall apply:

1. The landing water area shall be at least nine feet deep and a minimum of 10 feet by 10 feet or have a minimum of 15 feet in diameter if circular;
2. The jump space and landing area shall be free of other vessels, floating and submerged objects and buoys. A sign of approved size that reads "Bungee Jumping! Keep Clear" shall be fixed to buoys on four sides of the landing area;
3. The landing vessel shall be readily available for the duration of the landing procedures;
4. The landing vessel shall have a landing pad size of at least five feet by five feet within and lower than the sides of the vessel;
5. A landing vessel shall be available that can be maneuvered in the range of water conditions expected and will enable staff to pick up a jumper; and
6. One person may operate the landing vessel where the vessel is positioned without the use of power. A separate person shall operate the vessel where power is required to maneuver into or hold the landing position.

H. Where the landing area is part of a swimming pool or the landing area is specifically constructed for bungee jumping, the following shall apply:

1. Rescue equipment shall be available, such as a life ring or safety pole;
2. The jump space and landing area shall be fenced to exclude the public; and
3. Only the operators of the bungee jump and jumper shall be within the jump zone and landing areas.

I. Storage shall be provided to protect equipment from physical, chemical and ultra-violet radiation damage. The storage shall be provided for any current, replacement and emergency equipment and organized for ready access and shall be secure against unauthorized entry.

### **13VAC5-31-270. Management and personnel responsibilities.**

A. All bungee jumping activities shall have a minimum of one site manager, one jump master and one ground operator to be present at all times during operation of the bungee jump.

B. The site manager is responsible for the following:

1. Controlling the entire operation;

2. Site equipment and procedures;
3. Determining whether it is safe to jump;
4. Selection of, and any training of personnel;
5. Emergency procedures; and
6. Maintaining records.

C. A jump master shall be located at each jump platform and shall have thorough knowledge of, and is responsible for, the following:

1. Overseeing the processing of jumpers, selection of the bungee cord, adjustment of the rigging, final check of jumper's preparation, and countdown for and observation of the jump;
2. Verifying that the cord is attached to the structure at all times when the jumper is in the jump area;
3. Rescue and emergency procedures; and
4. Ensuring that the number of jumps undertaken in a given period of time will allow all personnel to safely carry out their responsibilities.

D. The ground operator shall have knowledge of all equipment used and of jump procedures and shall have the following responsibilities:

1. Ensuring that the jumper is qualified to jump;
2. Assisting the jump master to prepare the jumper and attach the jumper to the harness and rigging;
3. Assisting the jumper to the recovery area; and
4. Maintaining a clear view of the landing area.

E. Each site shall have an operating manual that shall include the following:

1. Site plan, job descriptions (including procedures), inspections and maintenance requirements of equipment including rigging, hardware, bungee cords, harnesses, and lifelines; and
2. An emergency rescue plan.

F. The daily operating procedures shall be conducted in accordance with ASTM F770.

G. The qualification and preparation of jumpers shall include obtaining any pertinent medical information, jumper weight and a briefing of jumping procedures and safety instructions.

#### Part X

#### Accessibility Requirements for Amusement Devices

##### **13VAC5-31-280. Scope.**

This part shall apply to newly designed and constructed amusement devices for permanent installation and does not apply to amusement devices regularly assembled or disassembled. This part also does not apply to mobile, portable, or temporary amusement devices set up for short periods of time such as at traveling carnivals, state and county fairs, and festivals. For the purposes of this part, newly designed and constructed amusement devices are those that are new upon first use by patrons and the first permanent installation of the ride and would not include a ride that was moved within a park or to another park after several seasons of use.

##### **13VAC5-31-290. Requirements.**

Amusement devices subject to this part shall comply with applicable requirements of 36 CFR Part 1191—Americans With Disabilities Act (ADA) Accessibility Guidelines for Buildings and

Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines (69 FR 44151-44455 (July 23, 2004)).

## Part XI

### Trampoline Courts

#### **13VAC5-31-300. Trampoline courts.**

In addition to other applicable requirements of this chapter, trampoline courts shall be operated, maintained, and inspected in accordance with ASTM F2970.

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