



TECHNICAL STANDARDS &
SAFETY AUTHORITY
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IN THE MATTER OF

THE SAFETY AND CONSUMER STATUTES ADMINISTRATION ACT 1996

and

THE TECHNICAL STANDARDS AND SAFETY ACT 2000

TAKE NOTICE THAT:

In accordance with the provisions of the *Technical Standards and Safety Act, 2000*, the attached document entitled, "The Amusement Devices Code Adoption Document" has been issued by the Technical Standards and Safety Authority and is intended to be adopted by the Amusement Devices Regulation.

June 1st, 2001

ORIGINAL SIGNED

Bill Wilkinson
Director,
Amusement Devices Act



AMUSEMENT DEVICES CODE ADOPTION DOCUMENT

June 1, 2001

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Issued by: ELEVATING AND AMUSEMENT DEVICES SAFETY DIVISION
TECHNICAL STANDARDS AND SAFETY AUTHORITY

FORWARD

The Amusement Devices Regulation made under the *Technical Standards and Safety Act* adopts this Code Adoption Document for the Province of Ontario.

Definitions in the Code Adoption Document have the same meaning as the Amusement Devices Regulation made under the *Technical Standards and Safety Act*.

This Code Adoption Document provides minimum requirements for the design, manufacture, construction, modification, erection and dismantling, operation, inspection, testing, and maintenance of amusement devices and rides.

In the event of conflict between a provision of this Document and adopted codes and standards, this Document shall prevail.

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Code Adoption Document referenced in the Amusement Devices proposed Regulation

PART I GENERAL

1. DEFINITIONS

1. (1) Where a provision of a code or standard adopted in this Code Adoption Document (Document) is inconsistent with the requirements of this Document, the provision of this Document shall prevail.

1.(2) In this Document,

"**bumper car**" means an automobile ride where the passenger carrying units are equipped with an encircling buffer device and operate in an enclosed area consisting of a runway and a current grid and where the action of passengers may cause one passenger carrying unit to impact in another;

"**coaster ride**" means an amusement ride where passenger carrying units gain potential energy by being driven to a predetermined height from which they descend by kinetic energy along a fixed track;

"**factor of safety**" means the ratio of the ultimate stress to the maximum stress imposed on a component of an amusement device due to fabrication, erection and environmental and operational conditions;

"**flume ride**" means an amusement ride where the passenger carrying units are propelled along a water channel by the flow of water and that incorporates a lifting mechanism that imparts potential energy to the passenger carrying units allowing them to descend by kinetic energy along an inclined water channel into a horizontal water channel that decelerates the passenger carrying units;

"**life-guard**" means a person who is the holder of,

(a) the National Lifeguard Services Lifeguard Certificate,

(b) the Royal Life Saving Society Canada's Bronze Cross,

(c) the Young Men's Christian Association's Basic Life Saver Award, or

(d) a certificate that is equivalent to a certificate referred to in clause (a), (b), or (c);

"**pelvic restraint**" means a portion of a seat belt assembly intended to restrain movement of the pelvis;

"**rollover protective structure**" means a system of structural members permanently affixed to a kart with intent to minimise the crushing risks to a person, who is restrained and properly seated in a kart, should the kart roll over and includes any sub-frames, brackets, and mounting provisions used for affixing to the kart;

"**rope lay**" means the length along a rope in which one strand makes a complete revolution around the rope;

"**rotor ride**" means an amusement ride in which the passengers by the action of centrifugal force are maintained against the inner wall of a rotating vertical cylinder at the same time that the floor of the cylinder is lowered away from the feet of the passengers;

"**SAE**" means the Society of Automotive Engineers;

"**seat belt assembly**" means any strap, webbing, or similar device, including buckles, other fasteners and hardware provided for installation of the assembly, that is provided to maintain a person in the kart seat with intent to minimize injuries to the person in the event of collision or roll over of the kart;

"**turntable ride**" means an amusement ride in which passengers are positioned on a smooth, flat, circular table that is surrounded by a cushioned barrier and that by the action of the table rotating tends to force the passengers to slide off the table and into the cushioned barrier;

"**upper torso restraint**" means a portion of a seat belt assembly intended to restrain movement of the chest and shoulder regions;

- 1.(3) Terms used in this Document have the meaning as in the *Technical Standards and Safety Act* or the Amusement Devices Regulation unless otherwise specified herein.
- 2.(1) Every amusement device that was operating in Ontario prior to June 1987 and that was registered under the predecessor Act entitled the *Amusement Devices Act* shall be deemed to meet the requirements of section 3, subsections 4(1),(2) and (3), sections 5 and 6, subsection 7(1), sections 8(1) and 10(1) and (4) of this Document and the standards adopted by section 3 of the CSA Standard Z267-M1983, Safety Code for Amusement Rides.
- 2.(2) Subsection (1) does not apply,

- (a) with respect to the part that is unsafe, where the person operating the amusement device is aware that a part of the amusement device is unsafe because it does not meet one of the requirements set out in a section referred to in subsection (1);
 - (b) with respect to the part that is unsafe, where an inspector finds that a part of an amusement device is unsafe; or
 - (c) with respect to the part, where a part of the amusement device is changed or replaced or a new part is added to the amusement device after this Regulation came into force.
- 2.(5) (a) Every new amusement device and alterations to existing device shall comply with the CSA Standard Z267-00 Safety Code for Amusement Rides and Devices.
- (b) Every existing amusement device shall comply with Sections 6.1.3, 6.1.4, 6.2,7 and 8 of the CSA Standard Z267-00.
 - (c) Where the manufacturer or designer is out of business, the licensee shall comply with the intent of the requirements of subsection (5)(b) by obtaining and maintaining the necessary information from its internal and/or external expertise.
- 2.(5) (d) All licensees shall assemble and maintain up dated documents prepared in accordance with the requirements of subsections (5)(b) and (5)(c) that shall include the following:
- (i) all instructions, bulletins or other information issued by manufacturers, designers, Designated Administrative Authority and other safety or regulatory authority that are applicable to the devices operated by the licensee; and
 - (ii) all additional instructions based on requirements in the Regulation under the *Technical Standards and Safety Act* and related to installation, operation, inspections, testing and maintenance including repairs.

PART II GENERAL TECHNICAL REQUIREMENTS

3. WELDING

- 3.(1) The welding of piping, fittings, and vessels containing an internal pressure greater than 103 kPa on an amusement device shall conform to CSA Standard B51-1997, Boiler, Pressure Vessel and Pressure Piping Code.

- 3.(2) The welding of stress bearing parts of an amusement device, other than parts referred to in subsection (1), the failure of which could create an unsafe condition, shall conform to CSA Standard W59-1989, Welded Steel Construction (Metal Arc Welding).
- 3.(3) The welding of piping, fittings, and vessels containing an internal pressure greater than 103 kPa on an amusement device shall be carried out by a person who is qualified in accordance with CSA Standard B51-1997, Boiler, Pressure Vessel and Pressure Piping Code.
- 3.(4) The welding of stress bearing parts of an amusement device, other than parts referred to in subsection (1), the failure of which could create an unsafe condition, shall be carried out by a person who is qualified in accordance with CSA Standard W47.1-1992, Certification of Companies for Fusion Welding of Steel Structures or W47.2-1987, Certification of Companies for Fusion Welding of Aluminium, as the case requires.

4. STRUCTURAL

- 4.(1) Structural loads and procedures considered in the design of structural members of every amusement device shall conform to those provisions of the Ontario Regulation made under the *Ontario Building Code Act*.
- 4.(2) Every permanent foundation that is built specifically for an amusement device shall be designed and constructed in accordance with those provisions of the Ontario Regulation made under the *Ontario Building Code Act*.
- 4.(3) Materials used for structural members of an amusement device shall be in accordance with those provisions of the Ontario Regulation made under the *Ontario Building Code Act*.
- 4.(4) Every platform, stair or ramp used in connection with an amusement device shall be designed and constructed in accordance with those provisions of the Ontario Regulation made under the *Ontario Building Code Act*, except that an inclined platform or ramp may have a maximum gradient of 1:8.

5. PIPE AND FITTINGS

All piping, valves and fittings used in the hydraulic or pneumatic drive mechanism shall be in accordance with the applicable provisions of the National Fluid Power Association (NFPA) or Society of Automotive Engineers (SAE) Standards.

6. FLEXIBLE HOSE AND COUPLINGS

All flexible hoses and fitting assemblies used shall be in accordance with the applicable provisions of the latest edition of the National Fluid Power Association (NFPA) or Society of Automotive Engineers (SAE) Standards.

7. PIN CONNECTIONS

7.(1) Every pin connection on an amusement device shall have a factor of safety of not less than ten.

7.(2) Where the failure of a single pin could create an unsafe condition on a part of an amusement device, a safety retainer shall be provided for that part of the amusement device that would be subject to the unsafe condition if the pin failed.

8. WIRE ROPE DESIGN

8.(1) The factor of safety for wire rope used on an amusement device shall be,

(a) where the safety of the passengers in a passenger carrying unit is dependent on one rope, twelve;

(b) where the safety of the passengers in a passenger carrying unit is dependent on two ropes, ten; or

(c) where the safety of the passengers in a passenger carrying unit is dependent on more than two ropes, eight.

8.(2) Where clips are used to fasten the end of a wire rope,

(a) the rope end shall be bent over a grooved heart-shaped thimble the groove of which has a radius equal to that of the rope;

(b) the U-bolt section of each clip shall contact the dead end or short end of the wire rope;

(c) at least two clips shall be used where the wire rope is less than nine millimetres in diameter;

(d) at least three clips shall be used where the wire rope is nine or more but less than sixteen millimetres in diameter;

(e) at least four clips shall be used where the wire rope is sixteen or more millimetres in diameter;

8.2 (f) the clips shall be spaced at a distance apart equal to six times the rope diameter and not closer than four times the rope diameter from the short-end of the rope; and

(g) the nuts on the clips shall not be fully tightened until after the rope has been under load and all nuts shall be fully tightened while the rope is still loaded.

9. WIRE ROPE MAINTENANCE

9.(1) A wire rope that is used on an amusement device shall be replaced with a new wire rope where,

(a) six randomly distributed wires are broken in one rope lay or three wires are broken in one strand in one rope lay of the wire rope and the failure of the wire rope could create an unsafe condition on a part of the amusement device;

(b) there is more than one broken wire in one rope lay of the wire rope and the wire rope bears the entire load of a passenger carrying unit on the amusement device;

(c) abrasion, scrubbing or peening has caused loss of more than one-third of the original diameter of a wire in the wire rope;

(d) corrosion occurs to a degree that would affect the factor of safety required for the wire rope;

(e) kinking, crushing, birdcaging or other damage results in distortion to the structure of the wire rope; and

(f) a reduction of 6 per cent or more occurs in the nominal diameter of the wire rope.

10. CHAIN DESIGN

10.(1) The factor of safety for link chain used on an amusement device shall be,

- (a) where the safety of the passengers in a passenger carrying unit is dependent on one link chain, fourteen;
- (b) where the safety of the passengers in a passenger carrying unit is dependent on two or more link chains and there is no safety retainer, twelve; or
- (c) where the safety of the passengers in a passenger carrying unit is dependent on two or more link chains and a safety retainer is used in conjunction with the link chains, ten.

10.(2) Where the safety of the passengers in a passenger carrying unit of an amusement device is dependent on a single link chain, a safety retainer shall be used together with the link chain.

10.(3) Link chain that is used as a safety retainer or in a stress bearing application on an amusement device shall,

- (a) be certified by the chain manufacturer as to its load carrying capacity; and
- (b) not be constructed of twisted wire or stamped chain.

10.(4) Each fastener that is used with a link chain on an amusement device shall have a load carrying capacity that is at least equal to the link chain to which it is fastened.

10.(5) Cold shuts, quick links, shackles, connecting links or open hooks shall not be added to the link chain that is used as a safety retainer or in a stress bearing application on an amusement device.

10.(6) Subsection (5) does not apply to shackles or quick threaded links that are used as end fasteners on a link chain.

11. CHAIN MAINTENANCE

11.(1) A link chain that is used on an amusement device shall be replaced with a new link chain where,

- (a) the reduction in the original diameter of the material forming a link in the chain shall not exceed 10 per cent unless otherwise specified by the designer or manufacturer of the amusement device;
- (b) a link is twisted or distorted;

- (c) corrosion occurs in a link to a degree that affects the factor of safety required for the link chain;
- (d) the link chain is used for a purpose other than that for which it is intended to be used; or
- (e) the link chain is used to carry a load in excess of its capacity.

12. FENCING, GUARDS AND CLEARANCES

12.(1) Fencing that will prevent a person from falling shall be provided for each amusement device where it is possible for a person to fall more than 600 millimetres off a platform.

12.(2) Fencing that will prevent access to the amusement device shall be provided for each amusement device where it is possible for persons other than those authorized by the operator or licensee to have access to an area where,

- (a) parts of the amusement device are moving at a speed that exceed 8 kilometres per hour or seven revolutions per minute;
- (b) any part of the amusement device or passenger swings out over an area to which the public has access less than 2.5 metres above ground level;
- (c) the normal operational mode of the amusement device is potentially hazardous to bystanders; or
- (d) guy wires or braces are used on the amusement device that are not clearly marked with streamers or other similar devices.

12.(3) Pursuant to sub-clause (2), fencing for existing amusement devices other than restricted to children only shall be at least one meter in height.

12.(4) For existing amusement devices in areas restricted to children only fencing shall be at least 600 millimetres in height.

12.(5) Each opening to an amusement device that provides entrance to or exit from the amusement device for the public shall be provided with a means of preventing persons from inadvertently entering the device.

12.(6) Fencing where required under this section shall be at least 750 millimetres from any moving part of an amusement ride.

12.(7) Every mounting, drive mechanism, structure or other component of an amusement device that could entangle a part of a passenger or the clothes of a passenger shall be guarded so as to prevent injury to a passenger.

- 12.(8)** Where two or more amusement devices are adjacent to one another and the public is authorized access between the amusement devices, each amusement device shall be so placed that between a part of an amusement device that is not fenced and
- (a) a moving part of an adjacent amusement device there is a space of at least four metres; or
 - (b) a fixed part of an amusement device or a fence around an adjacent amusement device there is a clear space or walkway of at least three metres.

PART III AMUSEMENT RIDES

13. GENERAL

- 13.(1)** The point of entry to the passenger carrying unit (PCU) of every amusement ride shall be so positioned that it does not exceed 500 millimetres vertically from the point of access to the passenger carrying unit (PCU), except where assistance is provided to access the PCU safely.
- 13.(2)** Those parts of passenger carrying units on an amusement ride that may come into contact with other passenger carrying units on the same ride shall be equipped with impact absorbing devices.

14. SUPPORT AND BLOCKING

- 14.(1)** Every amusement ride shall be erected,
- (a) on a surface that will bear safely all loads that are imposed on the amusement ride during its operation or that could reasonably be expected to be placed on the amusement ride due to the environmental conditions in the locality where the amusement ride is erected; and
 - (b) in such a manner as to be stable under all operating conditions and under all environmental conditions that are reasonably expected in the locality where the amusement ride is erected.
- 14.(2)** Bricks or cement blocks shall not be used to stabilize an amusement ride.
- 14.(3)** Subsection (2) does not apply to the use of bricks or cement blocks to stabilize a platform, stair or a ramp that forms part of an amusement ride but is independent structurally from the amusement device.

14.(4) Blocks, other than brick or cement blocks, that are used in the construction of an amusement ride shall, where the blocks are more than two tiers high, be cribbed or crossed.

14.(5) Where only one or two tiers of blocks are used in the construction of an amusement ride, the height of the blocking shall not exceed the total width of the base of the blocks being used.

14.(6) Blocking that is used in the construction of an amusement ride shall be sized so that the bearing surface of the blocking is at least equal to or greater than the bearing surface of the support pad of the amusement ride.

15. AUTOMOBILE RIDES

15.(1) Every automobile ride shall,

(a) be so limited or governed so as not to exceed 30 kilometres per hour;

(b) have a roadway that provides sufficient grip to enable each passenger carrying unit to be driven safely at maximum speed and to stop within a distance of ten metres; and

(c) have the roadway monitored during operation, either directly by operators or attendants or both or indirectly by visual and audio electronic means.

15.(2) A passenger carrying unit that is part of an automobile ride that is self-propelled by an internal combustion motor and that is losing oil or fuel shall be immediately removed from the roadway of the automobile ride.

15.(3) Lost oil or fuel from an automobile ride which can cause a hazard to public safety shall be removed immediately.

16. BUMPER CARS

16.(1) Each passenger carrying unit on a bumper car ride shall,

(a) be fitted with an encircling buffer of energy absorbing material that:
(i) shall be compatible with another passenger carrying unit; and
(ii) shall not ride over or under another bumper;

(b) be provided with a device to maintain continuous electrical contact with the runway;

(c) when used simultaneously with other passenger carrying units on a runway, not differ in weight by more than 30 per cent from the lightest passenger carrying unit; and

(d) have the steering wheel and its hub and all exposed components on the bumper car that are located between the seat and the steering wheel padded and designed so as to minimize the risk of injury to an occupant in the event of a collision.

16.(2) Every area surrounding a bumper car runway shall be fitted with crash borders that are compatible with the encircling buffer on the passenger carrying units and shall prevent the passenger carrying unit's encircling buffer from riding over or under the crash border upon impact.

16.(3) Every bumper car runway shall consist of segments that are undamaged, even, and clean and that make electrical contact with adjacent segments to minimize sparking.

16.(4) Every current collector pole that transfers power from the current grid to a bumper car on a bumper car ride shall,

(a) be anchored to the bumper car so as to prevent the pole from falling down during normal operation of the bumper car ride;

(b) be insulated, other than where it contacts the current grid, so as to prevent a person from getting an electric shock; and

(c) be padded up to a length so as to minimize risk of injury to a passenger.

17. CIRCULAR RIDES

17.(1) The control equipment of each amusement ride where a passenger can control the elevation of a passenger carrying unit shall,

(a) be so designed that the operator can override the passenger's control;

(b) allow elevation of the passenger carrying unit only after the rotating mechanism of the passenger carrying unit has been started; and

(c) allow sufficient time for the passenger carrying unit to be lowered to its lowest position before the rotating mechanism of the passenger carrying unit is stopped.

- 17.(2)** Every rotor ride shall be so designed that,
- (a) floor and inside cylinder walls are free of protruding or indented parts;
 - (b) the top rim of the cylinder is inaccessible to passengers and spectators;
 - (c) the enter and exit doors in the cylinder are fitted with at least one locking mechanism;
 - (d) the floor can only be lowered when the rotating cylinder reaches its maximum operational speed; and
 - (e) the floor is raised back into its original position before the operational speed of the cylinder is decreased.

18. TURNTABLES

Every turntable ride shall,

- (a) be smooth on all surfaces that contact passengers; and
- (b) have the non-moving sliding area,
 - (i) surrounded by a cushioned crash barrier,
 - (ii) on the same plane as the turntable, and
 - (iii) not less than two metres wide.

19. OPERATION AND USE

- 19.(1)** Every licensee shall ensure that no amusement ride operated by the licensee is operated where weather conditions make the operation of the amusement ride unsafe.

- 19.(2)** Passenger carrying units of an amusement ride that are self-propelled and that are used on a track at the same time shall all be operated by the same type of power source.

**PART IV
GO-KARTS**

20. KART DESIGN

- 20.(1)** Except as set out in subsections (2) and (3), the speed of every kart shall be inherently limited or governed so as not to exceed the maximum speed for which the track is designed.

- 20.(2)** The speed of an adult kart shall be limited or governed so as not to exceed 45 kilometres per hour.
- 20.(3)** The speed of a kiddie kart shall be limited or governed so as not to exceed 16 kilometres per hour.
- 20.(4)** Where the design of a kart enables the readjustment of its speed to exceed the limits set out in this section, the means of adjusting the speed shall not be accessible to the user of the kart.
- 20.(5)** The seat, back rest and leg area of every kart shall be so designed as to retain the driver inside the kart in the event of a collision at the front, rear or side of the kart.
- 20.(6)** Rotating, moving or hot engine parts of a kart that may constitute a hazard to an occupant of the kart shall be shielded to prevent burns to the occupant or the entanglement of the occupant's hair, hands or clothing.
- 20.(7)** No more than one person shall occupy a kart at any one time unless the kart is designed and equipped to seat two persons.
- 20.(8)** An adult kart shall have brakes that are so designed and adjusted as to enable it to slow down and stop the kart from its maximum speed within a distance of twelve metres carrying a ninety kilogram driver.
- 20.(9)** A kiddie kart shall have brakes that are so designed and adjusted as to enable it to slow down and stop the kart from its maximum speed within a distance of twelve metres carrying a forty kilogram driver.
- 20.(10)** The brake and throttle controls on a kart shall,
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(a) be foot or hand operated and readily recognizable as to function; and
(b) return automatically to a non-operational position when released.
- 20.(11)** The steering wheel and its hub and all exposed components on a kart that are
) located between the seat and the steering wheel shall be padded and designed so as to minimize the risk of injury to an occupant in the event of a collision or rollover.
- 20.(12)** A kart shall be provided with a padded headrest.
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- 20.(13)** A kart shall be provided with impact absorbing bumpers or body parts.
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- 20.(14)**) The wheels of a kart shall be so enclosed or guarded that the wheel of one kart cannot interlock with or ride over the wheels of another kart.
- 20.(15)**) The fuel tank of a kart shall be so designed and mounted to prevent it from damage if the kart rolls over and it shall be fitted with a gas cap of a type that will minimize leaking of fuel.
- 20.(16)**) Every kart shall be fitted with rollover protective structure and seat belt assembly.
- 20.(17)**) The rollover protective assembly referred to in subsection (16) shall be designed,
- (a) to withstand static and dynamic loads at maximum speed, acceleration, and deceleration of the kart;
 - (b) to withstand impact loads resulting from collision or rollover of the kart at its maximum speed; and
 - (c) to minimize injuries to all persons in the kart, in the event of collision or rollover of the kart at its maximum speed.
- 20.(18)**) The rollover protective structure referred to in subsection (16) shall,
- (a) be of such dimensions as to minimize the crushing risks to any person restrained in a kart seat by the seat belt assembly, in the event the kart rolls over; and
 - (b) be padded where a rider seated in the kart is likely to impact with the structure.
- 20.(19)**) The seat belt assembly referred to in subsection (16) shall,
- (a) be designed for a single person application;
 - (b) incorporate as a minimum pelvic restraint and upper torso restraint;
 - (c) maintain a person's location in the kart seat in the event of the kart rollover or collision;
 - (d) be adjustable to fit snugly any person in the kart; and
 - (e) be designed to prevent inadvertent release and relaxation of the assembly.

- 20.(20)** The replacement criteria for a seat belt assembly shall be identified in the maintenance manual with respect to wear and tear through usage and any other environmental factors that may have adverse effect on the safety of the seat belt assembly.

21. GO-KART TRACK DESIGN

- 21.(1)** A go-kart track shall,
- (a) have a hard and smooth surface;
 - (b) provide road grip sufficient to enable a kart to be driven safely at maximum speed and to stop within the stopping distance set out in section 20(8) and (9); and
 - (c) be free of ruts, holes or bumps.
- 21.(2)** White or yellow lines that are at least 100 millimetres in width shall be used to mark all inside and outside edges of a go-kart track except where barriers are provided along the inside and outside edges of the go-kart track.
- 21.(3)** Markings that indicate the direction of travel of karts shall be marked at various locations around the go-kart track.
- 21.(4)** Every go-kart track shall be closed at any time that the visibility on the track is less than fifty metres.
- 21.(5)** A go-kart track shall be equipped with ABC dry chemical fire extinguishers of 2.25 kilograms each in the locations referred to in subsection (6).
- 21.(6)** A fire extinguisher shall be located within seventy metres of every section of the go-kart track and at least one fire extinguisher shall be kept in the pit area.
- 21.(7)** The location of each fire extinguisher shall be prominently marked and the fire extinguisher easily accessible.
- 21.(8)** Refueling of karts shall be carried out at a location that is inaccessible to the public at the time of refueling.
- 21.(9)** The shoulder of every go-kart track shall,
- (a) be level with the go-kart track or sloped towards or away from the go-kart track at a gradient that does not exceed a 1:12 ratio; and
 - (b) have a smooth and firm surface up to at least ten metres from the edge of the go-kart track.

- 21.(10)** Where barriers that are provided for a go-kart track are of a fixed type, the requirements of subsection (9) apply only to the area between the edge of the go-kart track and the barriers.
- 21.(11)** Barriers shall be provided on every go-kart track,
- (a) along every outer edge of every go-kart track curve;
 - (b) between the go-kart track and every obstruction or hazard that is located within ten metres from the go-kart track; and
 - (c) along all non-access and non-egress edges of the pit area.
- 21.(12)** Alternative to subsection (11)(a) where a barrier is located away from an outer edge of any go-kart track curve, it shall meet the following performance criteria:
- (a) the shoulder within the sector formed by the outer edge of the go-kart curve and the barrier shall,
 - (i) be level with the go-kart track or sloped towards or away from the go-kart track at a gradient that does not exceed a 1:12 ratio, and
 - (ii) have a smooth and firm surface; and
 - (b) the location and the length of a barrier shall be such as to confine a go-kart, accidentally leaving any part of an outer edge of a go-kart track curve, within the section formed by that outer edge of the curve and the barrier.
- 21.(13)** Each barrier on a go-kart track shall,
- (a) be so constructed that a kart colliding with a barrier at maximum speed will come to a full stop, or be guided back to the proper part of the go-kart track, so as to minimize the risk of injury to any person restrained in the kart seat by the seat belt assembly;
 - (b) be so designed as to prevent a kart from overturning or running over or under the barrier after its contact with the barrier; and
 - (c) be constructed of materials that will not readily ignite.

- 21.(14)** Where a barrier on a go-kart track is of a nonfixed type, the barrier shall be) such that it will not encroach onto any section of the go-kart track or spectators' area as a result of coming into contact with a kart.
- 21.(15)** Every go-kart track shall be surrounded by a fence that is at least one metre in) height in order to prevent persons not authorized by the operator from having access to the go-kart track.
- 21.(16)** The requirements of subsection (15) may be met by natural barriers that) provide the same degree of protection as the fence required under subsection (15).

22. OPERATION AND USE

- 22.(1)** Only a person who is at least 1,320 millimetres in height and who is able to operate the brake and throttle controls from the driver's seat while restrained by the seat belt assembly shall be permitted to drive an adult kart.
- 22.(2)** Only a person who does not exceed 1,375 millimetres in height and who is able to operate the brake and throttle controls from the driver's seat while restrained by the seat belt assembly shall be permitted to drive a kiddie kart.
- 22.(3)** All karts that are operated simultaneously on a go-kart track shall have bumpers, body parts and wheels that are compatible.
- 22.(4)** Adult karts and kiddie karts shall not be operated on the same track at the same time.
- 22.(5)** No kart shall be operated on a go-kart track where the weather conditions are such that the requirements of section 21(1)(b) cannot be satisfied.
- 22.(6)** Every section of a go-kart track shall be monitored during its operation, either directly by operators or attendants or both or indirectly by visual and audio electronic means.
- 22.(7)** A kart that is losing oil or fuel shall be immediately removed from the go-kart track.
- 22.(8)** Only a person who is wearing a helmet that fits the person's head and that meets the requirements of Regulation 610 of the Revised Regulation of Ontario, 1990 (Safety Helmets) made under the *Highway Traffic Act*, shall be authorized to use a kart.

- 22.(9) A person who has hair longer than shoulder length shall not be permitted to use a kart unless the person's hair is tied up so as to make it shoulder length or shorter.
- 22.(10) A person who is smoking shall not be authorized to use a kart.
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- 22.(11) A person who is wearing loose clothing so as to interfere with the safe
) operation of the kart shall not be permitted to use a kart unless the person's clothing is safely secured.
- 22.(12) Every go-kart shall have a sign posted at the entrance to or in the pit that
) conveys the following rules and instructions, as applicable to the track:
- (a) Height restrictions shall be posted in accordance with the Regulation.
 - (b) Keep hands and feet in the kart at all times.
 - (c) Approved helmets must be worn.
 - (d) Hair longer than shoulder length and loose clothing shall be secured.
 - (e) Riders shall not operate a kart while under the influence of alcohol or drugs.
 - (f) No smoking in karts or in pit area.
 - (g) No stopping, bumping or swerving on track.
 - (h) Obey attendant and stay in kart until ride is complete, and directed by attendant to unload.
 - (i) No rider shall act in a manner that may cause or contribute to injury to themselves or others.
 - (j) Any violation will cause the rider to forfeit the remainder of the ride and may result in charges under the *Technical Standards and Safety Act*.
 - (k) Failure by an individual to comply with the rules may result in fine up to \$25,000 or one year in prison, or both.
 - (l) Persons who are not substantially protected by the rollover protective structures shall be prohibited from riding the kart.

- 22.(13)** The written rules referred to in subsection (12) shall be in uppercase letters) with a minimum height of not less than 25mm. such that the lettering is in a contrasting colour to the background of the sign.
- 22.(14)** An operator or an attendant shall check that any person riding a kart is) properly restrained in the seat by the seat belt assembly prior to the kart leaving the pit area.

**PART V
WATER SLIDES**

23. DESIGN

- 23.(1)** Every water slide shall be so designed that,
- (a) the support structure and frame will safely sustain the weights and pressures reasonably expected to be placed on the water slide over the projected operating life of the water slide;
 - (b) contact between a person using the water slide and any object where contact with the object is likely to cause injury is prevented;
 - (c) the strength of the materials used in the construction of the water slide and the accessories used in and around the water slide will not be affected by exposure to the environmental conditions reasonably expected in the locality where the water slide is erected;
 - (d) parts with external surfaces that may come into contact with a person using the water slide are assembled, arranged and finished so that they will not cut, pinch, puncture or cause an abrasion to any person;
 - (e) surfaces that may come into contact with a person using the water slide are inert, non-toxic, smooth and easy to clean;
 - (f) sufficient ventilation is provided to prevent the concentration of toxic fumes from disinfectants used with the water slide;
 - (g) the walking surfaces in and about the water slide including the entrance and exit to the water slide are slip-resistant and will not retain water;
 - (h) the frequency of dispatching a rider at the entry to the water slide shall be such that the splash down area is cleared before the person next following splashes down; and

- (i) incorporates facilities for water treatment.
- 23.(2)** Every room that is used to store chemicals or machinery used in the operation of a water slide shall be secured so as to prevent entry by any person who is not permitted to enter the room by the authorization holder.
- 23.(3)** Every mat or sliding apparatus used on a water slide shall,
- (a) be free of sharp corners and protrusions;
 - (b) have a sliding surface that allows smooth movement through the channel of the water slide; and
 - (c) be so constructed that the impact of a mat or sliding apparatus into a person will not cause injury to the person.
- 23.(4)** Every water slide channel shall,
- 23.(4)** (a) be banked so as to keep each person using the water slide safely inside the channel ;
- (b) be so designed that,
 - (i) the speed of each person on each curve of the water slide is such that the person can maintain a safe body equilibrium,
 - (ii) the attachment of channel components form a continuous and smooth surface,
 - (iii) the curves and tunnels do not create hazard for a person who impacts with any surface within a tunnel,
 - (iv) the continuous and combined action of hydrostatic, dynamic and static loads and deterioration due to environmental conditions reasonably expected in the locality where the water slide is erected do not cause structural failure that could result in injury to a person using the water slide,
 - (v) the channel terminates, at a distance in relation to the splash down area, so that it does not create a hazard to any person using the water slide, and
 - (vi) no change of direction of the channel will cause a person using the slide to be injured.
- 23.(5)** The amount of water in every slide shall be such that will create a flow in the channel sufficient to keep each person using the water slide moving in the channel for the entire length of the channel at a speed that will not create a hazard to the person.

- 23.(6)** Every water slide splash down area shall,
- (a) be of sufficient length, width and depth so as to prevent each person splashing down from a channel into the splash down area from contacting the walls or bottom of the splash down area, adjacent channel exits or other persons exiting into the splash down area;
 - (b) have each inlet for the water circulation system,
 - (i) of a size that will not create an inlet suction pressure that is hazardous to persons using the water slide,
 - (ii) located so as to be inaccessible to persons using the water slide, or
 - (iii) protected with a device positioned in front of the inlet so as to prevent persons using the water slide from being drawn against the inlet; and
 - (c) such that the water level in the splash down area is kept above the minimum required for the safe operation of the water slide as specified by the manufacturer and designer of the water slide.

24. OPERATION

24.(1) The area at the top of every water slide shall be supervised by at least one attendant who shall have continuous and direct supervision of that area and who shall be responsible for,

- (a) ensuring that persons using the water slide conduct themselves in an orderly manner, that there is no running or other unsafe behaviour in the upper part of the water slide channels and starting areas and that persons enter and leave the starting zone at safe intervals; and
- (b) supervising all areas of the water slide, other than the splash down area, that are visible to the attendant from the attendant's station.

24.(2) The splash down area of every water slide shall be supervised by at least one attendant who is a lifeguard who shall have continuous and direct supervision of that area and who shall be responsible for ensuring that persons using the water slide,

- (a) move into and out of the splash down area in a quick and orderly manner; and
- (b) conduct themselves in an orderly manner and that there is no running or other unsafe behaviour in the lower part of the water slide channels, splash down area or pool deck; and
- (c) clear the splash down area for the following person to splash down.

- 24.(3)** Every water slide shall be equipped with a battery or electronically operated voice communication system between an attendant who is supervising the splash down area and an attendant who is supervising at the top of the water slide.
- 24.(4)** The daily inspection required to be carried out under section 14 (1)(b) of the Amusement Devices Regulation shall be carried out on each water slide to ensure the safe operation of the water slide,
- (a) before the water is circulated to ensure that no safety hazard exists; and
 - (b) with the water circulating to ensure that the pumping and filtering equipment are operating correctly and that, there is
 - (i) correct level of water in the splash down area, and
 - (ii) there is sufficient water flowing in the channels of the water slide.
- 24.(5)** The splash down area divider shall be in place, where the splash down area forms an integral part of a swimming pool.
- 24.(6)** Every water slide shall have a sign posted at the entrance to the water slide that conveys the following rules and instructions:
- (a) obey all orders given by the attendant and operator;
 - (b) no person shall dive, run, stand, kneel, rotate or stop in the channel;
 - (c) hands must be kept inside the channel;
 - (d) users must leave the splash down area promptly;
 - (e) no person shall bring glass, bottles or food into the water slide area;
 - (f) no bunching or chaining by riders permitted;
 - (g) such restrictions as may be placed on the use of the water slide by the manufacturer and designer of the water slide;
 - (h) the depth of water in discharge splash down area.
- 24.(7)** The written rules referred to in subsection (6) shall be in uppercase letters with a minimum height of not less than 25mm. such that the lettering is in a contrasting colour to the background of the sign.
- 24.(8)** Attendants at the entry and splash down area of every water slide shall ensure that the splash down area is cleared for the next person to splash down.

PART VI
AMUSEMENT DEVICES INCORPORATING ELASTIC SUSPENSION
SYSTEMS

- 25.(1)** Every bungee ride or bungee type device shall comply with the Canadian Bungee — Code of Safe Practice . (Revision 04/07/00).