Designation: F3133 – 16

Standard Practice for Classification, Design, Manufacture, Construction, Maintenance, and Operation of Stationary Wave Systems[1]

This standard is issued under the fixed designation F3133; 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.

1. Scope

1.1 This practice applies to the classification, design, manufacture, construction, operation, maintenance, and inspection of stationary waves.

1.2 Stationary wave systems shall be defined as a system that delivers a constantly flowing sheet of water nominally up to 24 in. thick travelling over a form allowing for patron interaction with a perpetual wave.

1.3 *Significance and Use:*

1.3.1 For the purposes of this practice, a wave system could include:

1.3.1.1 The ride surface,

1.3.1.2 The ride feature pump(s),

1.3.1.3 The water filtration and disinfection system,

1.3.1.4 The runout areas,

1.3.1.5 The structural supports,

1.3.1.6 Vehicles or other aquatic accessories that are part of the water ride as defined by the designer/engineer, and

1.3.1.7 Control systems.

1.3.2 This practice shall not apply to:

1.3.2.1 Amusement rides and devices whose design criterion is specifically addressed in other ASTM standards;

1.3.2.2 Preexisting designs manufactured before the effective date of publication of this practice if the design is service proven as defined in Practice F2291; and

1.3.2.3 Deep water wave pools, Action Rivers, lazy rivers or waterslides.

1.3.3 The terms stationary wave systems, standing wave systems, sheet wave systems, and wave systems shall be considered equivalent when used in this practice.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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

2. Referenced Documents

2.1 *ASTM Standards:*[2]

F747 Terminology Relating to Amusement Rides and Devices

F770 Practice for Ownership, Operation, Maintenance, and Inspection of Amusement Rides and Devices

F1193 Practice for Quality, Manufacture, and Construction of Amusement Rides and Devices

F2291 Practice for Design of Amusement Rides and Devices

F2376 Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems

2.2 *Other Standard:*

ASME/ANSI APSP-16 Suction Fittings for Use in Swimming Pools, Wading Pools, Spas and Hot Tubs

3. Terminology

3.1 *Definitions*—Many terms have a common accepted use in the wave system industry that is unique. This is to establish a basic common vocabulary as well as a basis for classification that differentiates design parameters. All terms in this practice are candidates for inclusion in Terminology F747.

4. Design Requirements

4.1 Design of wave systems shall be in accordance with Practice F2291, Section 8 with the following exceptions and inclusions:

4.1.1 Unless proven otherwise, loads from all operating conditions shall demonstrate a minimum of five to one factor of safety.

4.2 The designer/engineer shall design the ride such that it can reasonably prevent patrons from involuntarily exiting the ride during riding or runout.

[1] This practice is under the jurisdiction of ASTM Committee F24 on Amusement Rides and Devices and is the direct responsibility of Subcommittee F24.70 on Water Related Amusement Rides and Devices.

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