This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: F1159 – 16ε1

Standard Practice for Design of Amusement Rides and Devices that are Outside the Purview of Other F24 Design Standards[1]

This standard is issued under the fixed designation F1159; 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.

ε[1] NOTE—Editorial corrections incorporated throughout in June 2021.

1. Scope

1.1 This practice establishes information and procedures for the design of amusement rides and devices and major modifications to amusement rides and devices which the designer/engineer identifies as outside the purview of other ASTM F24 design standards.

1.1.1 Prior to designating an amusement ride or device as outside the purview of other ASTM F24 standards and subject to Practice F1159-16, the designer/engineer shall perform a review of all standards under the jurisdiction of the ASTM Committee F24 addressing amusement ride and device design and determine that Practice F1159-16 is appropriate and more applicable to the amusement ride or device than other ASTM Committee F24 practices addressing amusement ride and device design.

1.1.2 In making such a determination, the designer/engineer shall consider the following:

1.1.2.1 The general nature of the amusement ride or device;

1.1.2.2 The absence of relevant specific requirements or features addressed by other ASTM Committee F24 practices.

1.2 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

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

F2291 Practice for Design of Amusement Rides and Devices

3. Significance and Use

3.1 This practice provides designers/engineers of amusement rides and devices not addressed in the other ASTM Committee F24 standards with design references and criteria to use in design development.

4. General Design Requirements

4.1 *Design and Calculations*—Basic documentation and engineering analysis shall be in accordance with Practice F2291-20.

4.2 *Drawings and Records*—Records shall be kept in accordance with Practice F2291-20.

4.3 *Testing*—Document and record the testing performance of amusement rides and devices in accordance with the tests given in Practice F1193-18a.

DESIGN PROCEDURES

5. Patron Restraint, Clearance Envelope, and Containment Design Criteria

5.1 Patron restraint, clearance envelope, and containment design criteria shall be in accordance with Section 6 of Practice F2291-20.

6. Amusement Ride and Device Structures Fastening, Mechanical Systems and Components, Fall Protection, Adhesive Bonding, and Coatings

6.1 Structures shall be designed in accordance with the provisions of Practice F2291-20, Section 8.

[1] This practice is under the jurisdiction of ASTM Committee F24 on Amusement Rides and Devices and is the direct responsibility of Subcommittee F24.24 on Design and Manufacture.

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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.

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