



# Standard Practice for Design and Manufacture of Patron Directed, Artificial Climbing Walls, Dry Slide, Coin Operated and Purposeful Water Immersion Amusement Rides and Devices and Air- Supported Structures<sup>1</sup>

This standard is issued under the fixed designation F 1159; 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 establishes information and procedures for the design and manufacture of patron directed amusement rides or devices (for example, go karts, bumper cars, bumper boats), artificial climbing walls, dry slides, coin operated rides, and amusement rides and devices that involve the purposeful immersion of the patron's body partially or totally in the water and involve more than incidental patron contact (for example, pools, water slides, lazy rivers, interactive aquatic play devices), and air-supported structures.

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

## 2. Referenced Documents

### 2.1 ASTM Standards:

F 846 Guide for Testing Performance of Amusement Rides and Devices<sup>2</sup>

F 2007 Practice for the Classification, Design, Manufacture, and Operation of Concession Go-Karts and Facilities<sup>2</sup>

### 2.2 Federal Documents:<sup>3</sup>

Dept. of Health, Education, and Welfare *Pediatric Growth Development Chart*, 1983

OSHA 29 CFR Fall Protection Systems Criteria and Practices Part 1926.502 (d)

USDA Agricultural Handbook 72, Rev. 0—*The Wood Handbook*, by the U.S. Dept. of Agricultural Forest Products Laboratory

### 2.3 Society of Automotive Engineers Standards:<sup>4</sup>

SAE J 833 Recommended Practice for USA Human Physiological Dimensions

SAE Hydraulic Fluid Standards

SAEJ-10 Pneumatic Storage Tanks

SAE Pneumatic Tubing Standards

### 2.4 American Society of Mechanical Engineers Documents:<sup>5</sup>

ASME Boiler and Pressure Vessel Code, Section VIII, Division 1

ASME Welding Standards

### 2.5 American Institute of Steel Construction Document:<sup>6</sup>

AISC Manual on Steel Construction

### 2.6 American Welding Society Standard:<sup>7</sup>

ANSI/AWS D1.1 Structural Welding Code

### 2.7 National Fire Protection Association Standard:<sup>8</sup>

National Electrical Code

### 2.8 ANSI Standard:<sup>9</sup>

ANSI (NFPA/JIC) T2.24.1–1991 Hydraulic Fluid Power Systems Standard for Stationary Industrial Machinery,<sup>9</sup>

## 3. Significance and Use

3.1 This practice provides designers and manufacturers of patron directed amusement rides or devices (for example, go karts, bumper cars, bumper boats), artificial climbing walls, dry slides, coin operated rides, water amusement rides or devices (involve the purposeful immersion of the patron's body partially or totally in the water and involve more than incidental patron contact (for example, pools, water slides, lazy rivers, interactive aquatic play devices)), and air-supported structures with design references and criteria to use in designing and manufacturing of patron directed amusement rides or devices,

<sup>1</sup> 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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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 15.07.

<sup>3</sup> Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

<sup>4</sup> Available from Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.

<sup>5</sup> Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990.

<sup>6</sup> Available from the Institute of Steel Construction, P.O. Box 4588, Chicago, IL 60680.

<sup>7</sup> Available from the American Welding Society, 550 N. LeJeune Rd., Miami, FL 33126.

<sup>8</sup> Available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

<sup>9</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.