



Designation: F3559 – 23

Standard Guide for ASTM F24 Standards Governing Lifecycle Management of Amusement Rides and Devices¹

This standard is issued under the fixed designation F3559; 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 guide provides an overview of the appropriate F24 standard(s) to be applied during development and operation and use phases of an amusement ride or device.

1.2 This guide sets forth procedures for owners, operators, designers, engineers, manufacturers, vendors, and suppliers to apply throughout the lifecycle of an amusement ride or device.

1.3 This guide sets forth procedures for assessing and managing the end of operational life for an amusement ride or device, sub-system or component.

1.4 This guide includes an appendix, which provides additional information to improve the understanding and application of the criteria presented in this standard guide.

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

1.6 *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

F747 Terminology Relating to Amusement Rides and Devices

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

F1159 Practice for Design of Amusement Rides and Devices

that are Outside the Purview of Other F24 Design Standards

F1148 Consumer Safety Performance Specification for Home Playground Equipment

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

F1487 Consumer Safety Performance Specification for Playground Equipment for Public Use

F1918 Safety Performance Specification for Soft Contained Play Equipment

F1957 Test Method for Composite Foam Hardness-Durometer Hardness

F2007 Practice for Design, Manufacture, and Operation of Concession Go-Karts and Facilities

F2137 Practice for Measuring the Dynamic Characteristics of Amusement Rides and Devices

F2291 Practice for Design of Amusement Rides and Devices

F2374 Practice for Design, Manufacture, Operation, and Maintenance of Inflatable Amusement Devices

F2375 Practice for Design, Manufacture, Installation and Testing of Climbing Nets and Netting/Mesh used in Amusement Rides, Devices, Play Areas and Attractions

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

F2460 Practice for Special Requirements for Bumper Boats

F2461 Practice for Manufacture, Construction, Operation, and Maintenance of Aquatic Play Equipment

F2729 Consumer Safety Specification for Constant Air Inflatable Play Devices for Home Use

F2783 Practice for Design, Manufacture, Operation, Maintenance, and Inspection of Amusement Rides and Devices, in Canada

F2959 Practice for Aerial Adventure Courses

F2960 Practice for Permanent Amusement Railway Ride Tracks and Related Devices

F2970 Practice for Design, Manufacture, Installation, Operation, Maintenance, Inspection and Major Modification of Trampoline Courts

F2974 Practice for Auditing Amusement Rides and Devices

F3054 Practice for Operations of Amusement Railway Rides, Devices, and Facilities

F3099 Practices for Parasailing

¹ This guide 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 Sept. 1, 2023. Published October 2023. DOI: 10.1520/F3559-23.

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.

F3133 Practice for Classification, Design, Manufacture, Construction, Maintenance, and Operation of Stationary Wave Systems

F3158 Practice for Patron Transportation Conveyors Used with a Water Related Amusement Ride or Device

F3168 Practice for Hayride Attractions

F3214 Practice for Characterization of Fire Properties of Seating, Upholstery, and Padding Materials for Vehicles Associated with Amusement Rides and Devices

3. Terminology

3.1 Definitions:

3.1.1 *core standard, n*—an F24 standard that contains fundamental requirements and recommendations which, in whole or in part, are applied to all types of amusement rides and devices.

3.1.1.1 *Discussion*—It is permissible that specific standards only reference the applicable requirements within each of the core standards. For those amusement rides or devices with a specific standard, the design criteria in the specific standard will govern while referencing to applicable sections within the Core Standards.

3.1.2 *operation and use phase, n*—the Lifecycle phase that begins after the amusement ride or device has been commissioned and is first placed into service and ends once it is permanently taken out of service.

3.1.2.1 *Discussion*—This phase includes all uses of the amusement ride or device, such as operation, maintenance, inspection, and evacuation. This phase also includes routine setup (assembly), tear down (disassembly), transportation and storage of portable amusement rides and devices.

3.1.3 *qualified alternate supplier, n*—a company or individual who is knowledgeable in the design/engineering of amusement rides or devices including understanding of ASTM F24 and other relevant codes, but who was not an original designer/engineer or manufacturer at the time the amusement ride or device began Operation and Use.

4. Significance and Use

4.1 The scope of the Committee F24 is the development of standard methods of testing, performance specifications, definitions, standard methods of maintenance and operations, and best practices for amusement rides and devices. The work of this Committee F24 will be coordinated with other ASTM Committees and other societies and organizations having mutual interest.

4.2 The intent of this standard guide is to serve as an overview for F24 standards and to outline processes and procedures to manage the lifecycle of an amusement ride or device. Persons looking for more details on an individual type of amusement ride or device should reference the specific standards available. See [Appendix X1](#).

5. Summary of Guide

5.1 This standard guide defines seven primary phases of the lifecycle of an amusement ride or device. See [X2.1](#) for additional information. Refer to [Fig. 1](#). The phases include:

- 5.1.1 Requirements Definition,
- 5.1.2 Design and Engineering,
- 5.1.3 Manufacturing,
- 5.1.4 Installing,
- 5.1.5 Commissioning,

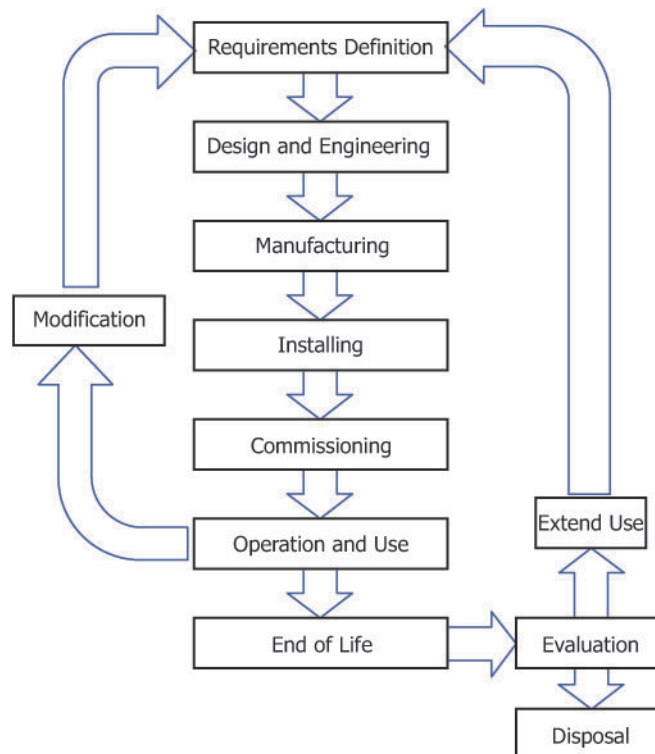


FIG. 1 Lifecycle Chart