



ASTM BASIC





NAARSO
30th Annual
Ride Safety Inspection Forum





What is ASTM?

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- ▶ **American Society for Testing and Materials**
 - ▶ Organized in 1898, ASTM International is one of the largest voluntary standards development organizations in the world. ASTM International is a not-for-profit organization that provides a forum for the development and publication of voluntary consensus standards for materials, products, systems, and services. More than 30,000 members representing producers, users, ultimate consumers, and representatives of government and academia develop documents that serve as a basis for manufacturing, procurement, and regulatory activities.

What is a Standard?

▶ Specification

- an explicit set of requirements to be satisfied by a material, product, system, or service.

▶ Test Method

- a definitive procedure that produces a test result.

▶ Practice

- a definitive set of instructions for performing one or more specific operations that does not produce a test result.





What is a Standard?

▶ Guide

- a compendium of information or series of options that does not recommend a specific course of action.

▶ Classification

- a systematic arrangement or division of materials, products, systems, or services into groups based on similar characteristics such as origin, composition, properties, or use.

▶ Terminology

- a document comprising definitions of terms; explanations of symbols, abbreviations, or acronyms.





Voluntary and Consensus

- ▶ Voluntary
 - ▶ Developed voluntarily
 - ▶ Used voluntarily
- ▶ Consensus
 - ▶ All who are interested may participate
 - ▶ All points of view have equal representation





Are Standards Mandatory?

- ▶ When referenced and mandated by a Government Body
- ▶ When cited in contractual agreement



Neutrality

- ▶ ASTM standards are used by certification and accreditation agencies; however, ASTM does not certify or accredit materials, systems or services



Membership

- ▶ Open membership
- ▶ One vote per “voting interest”
- ▶ Balanced
 - Producers (manufacture)
 - Users (product customers)
 - General Interest (government/academia)



Balanced Participation

- ▶ Ensures the development of standards with the highest credibility when critically examined and used as the basis for commercial, educational, legal or regulatory actions



ASTM Structure

- ▶ 34,000 Members
 - 100 Countries represented
- ▶ 131 Technical committees
- ▶ 2,200 Subcommittees
- ▶ Thousands of task groups





Main Committee

- ▶ Large group with broad interest
- ▶ Consist of a selection of subcommittees
- ▶ Approved by ASTM Board
- ▶ Led by chairman and officers





Committee F-24

- ▶ Amusement Rides and Devices
- ▶ Established: 1978
- ▶ 880 members
- ▶ 21 standards
- ▶ 11 Technical subcommittees
- ▶ 1 Executive subcommittee



Subcommittee

- ▶ Group of individuals with a specific interest
- ▶ First level of formal balloting





F-24 Subcommittees

- ▶ F24.10 Test Methods
- ▶ F24.20 Specifications and Terminology
- ▶ F24.24 Design and Manufacture
- ▶ F24.30 Maintenance and Inspection
- ▶ F24.40 Operations
- ▶ F24.50 Training, Education and Certification
- ▶ F24.60 Special Rides/Attractions
 - ▶ F24.61 Adventure Attractions
 - ▶ F24.65 Parasailing
- ▶ F24.70 Water Related
- ▶ F24.80 Harmonization
- ▶ F24.90 Executive



Task Group

- ▶ Informal
- ▶ Basic level of standards development
- ▶ Five to seven “expert” individuals
- ▶ You do not have to be a member of ASTM to join/support a task group!

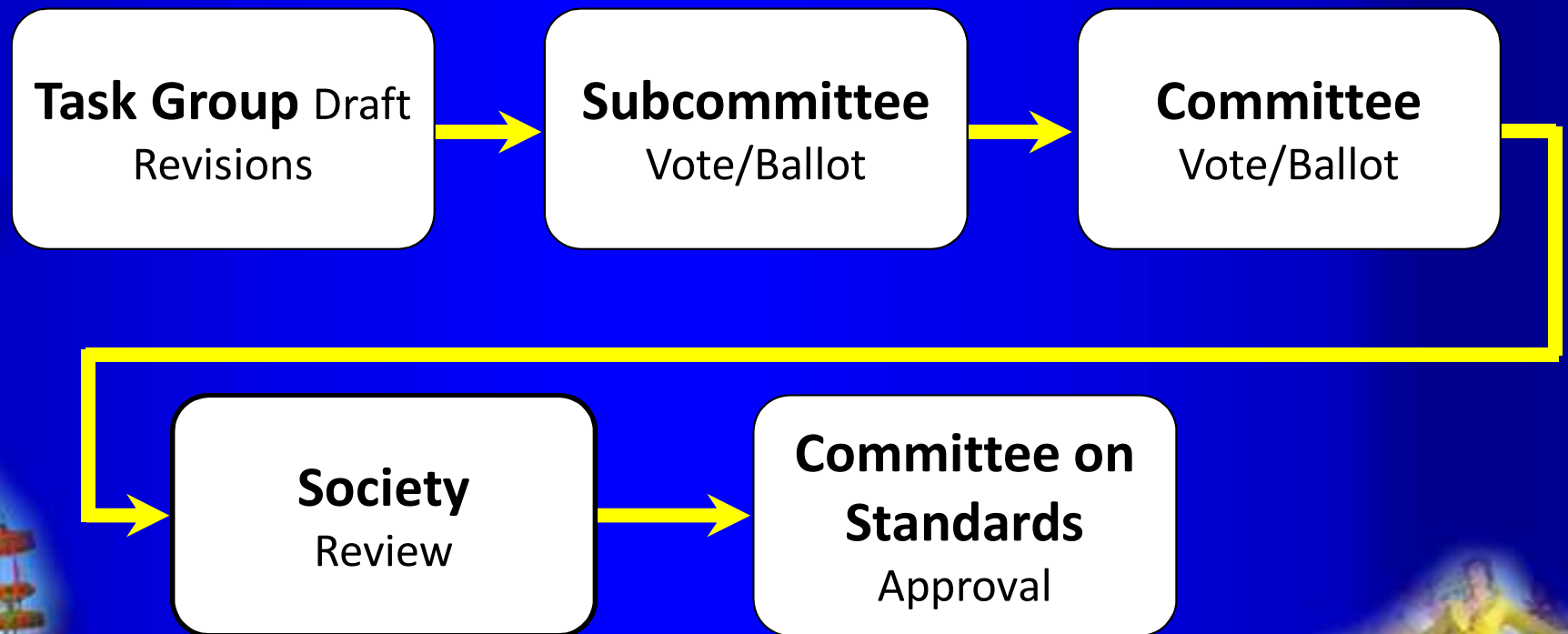


F-24 Task Groups

24.10	New Flame/Smoke								
24.20	F747 Terms Revisions								
24.24	F2291 Station Guarding	F2291 Evacuation Analysis	F2291 Operator Controls	F2291 Data Security	F2291 Accessibility	F2291 Structural Barrier			
24.30	F2974 Enhancement								
24.40	F770 Reformat								
24.50	New 3rd Party Training								
24.60	New Patron Sphere	New Tents, Canopies							
24.61	F2374 Inflatables revise	F2959 Aerial Adv Enhancement	F2970 Trampoline revise	New Hayrides	New Summer Toboggan Run	New Land Based Obstacle			
24.65	F3099 Parasail Revisions	New Wake Boarding Park							
24.70	F2376 Fall Protect	F3158 Accel vs Restraint	New Jet Propelled	New Air Inflate Aquatic					
24.80	New Latin								

Development Process

- ▶ Standards are developed using a ballot process to achieve consensus



Core Standards

F 747- 15

Standard Terminology Relating to
Amusement Rides and Devices

F 770 - 15

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

F 1193 - 16

Standard Practice for
Quality, Manufacture, and Construction of
Amusement Ride and Devices

F 2291-16

Standard Practice for Design of
Amusement Rides and Devices

F 2974-15

Standard Guide for Auditing
Amusement Rides and Devices





Supporting Standards



F 1159 -15b

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

F 1957- 99 (2011)

**Standard Test Method for Composite Foam Hardness-
Durometer Hardness**

F 2137-16

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



F 2783-14

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





Specialty Standards



F 2007-12

Standard Practice for the Classification, Design, Manufacture, and Operation of Concession Go-Karts and Facilities

F 2460 -11

Standard Practice for Special Requirements for Bumper Boats

F 2374 -10

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

F 2461- 16

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

F2375 - 09

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

F 2959 - 16

Standard Practice for Special Requirements for Aerial Adventure Courses



F 2376 - 13

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

F 2960 - 16



Standard Practice for Permanent Amusement Railway Ride Tracks and Related Devices



Specialty Standards



F2970 - 15

Standard Practice for Design, Manufacture, Installation, Operation, Maintenance, Inspection and Major Modifications of Trampoline Courts

F3133 - 16

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

F 3045 - 15

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

F 3158 - 16

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

F 3099 - 14

Standard Practices for Parasailing





Contact Information



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Thank You!

