



Designation: F3214 – 18

Standard Practice for Characterization of Fire Properties of Materials Specified for Vehicles Associated with Amusement Rides and Devices¹

This standard is issued under the fixed designation F3214; 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 covers material properties related to flammability, smoke products and heat release rates for materials specified for vehicles associated with amusement rides and devices.

1.2 This practice also defines specific requirements for standardized test methods for determining material properties related to flammability, smoke production and heat release rates for materials specified for vehicles associated with amusement rides and devices.

1.3 This practice defines acceptance criteria for the material properties of flammability, smoke production and heat release rates for seating, upholstery and padding materials specified for vehicles on amusement rides and devices.

1.4 This practice includes an appendix (non-mandatory), which provides additional information (for example, rationale, background, interpretations, drawings, commentary, and so forth) to improve the user's understanding and application of the criteria presented in this practice. The appendix information shall not be interpreted as mandatory design criteria.

1.5 This practice shall not apply to:

- 1.5.1 Materials specified for amusement rides or devices not associated with the vehicle.
- 1.5.2 Materials used for the construction of facilities.
- 1.5.3 Fluids and lubricants.
- 1.5.4 Mats used on water slides or other aquatic devices.

1.6 *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.*

1.7 *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 Recom-*

¹ This practice is under the jurisdiction of ASTM Committee F24 on Amusement Rides and Devices and is the direct responsibility of Subcommittee F24.10 on Test Methods.

Current edition approved Feb. 1, 2018. Published March 2018. DOI: 10.1520/F3214-18.

mendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 ASTM Standards:²

- E84 Test Method for Surface Burning Characteristics of Building Materials
- E136 Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C
- E162 Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source
- E662 Test Method for Specific Optical Density of Smoke Generated by Solid Materials
- E1354 Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter
- F2291 Practice for Design of Amusement Rides and Devices

2.2 DIN Standard:³

- DIN 4102 Fire behavior of building materials and building components

2.3 EN Standards:⁴

- EN-1021-1 Assessment of the Ignitability of Upholstered Furniture

2.4 ISO Standards:⁵

- ISO 5660-1 Fire tests – Reaction to fire – Part 1: Rate of heat release from building products – (Cone calorimeter method)
- ISO 5660-2 Reaction-to-fire tests – Heat release, smoke production and mass loss rate, Part 2: Smoke production rate (dynamic measurement)

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.

³ Available from Deutsches Institut für Normung e.V.(DIN), Am DIN-Platz, Burggrafenstrasse 6, 10787 Berlin, Germany, <http://www.din.de>.

⁴ Available from European Committee for Standardization (CEN), Avenue Marnix 17, B-1000, Brussels, Belgium, <http://www.cen.eu>.

⁵ Available from International Organization for Standardization (ISO), ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <http://www.iso.org>.