

**LOG OF MEETING
DIRECTORATE FOR ENGINEERING SCIENCES**

SUBJECT: ASTM Committee F24 on Amusement Park Rides and Devices General Meeting

DATE OF MEETING: October 12-16, 2020

PLACE OF MEETING: Teleconference

LOG ENTRY SOURCE: Daniel Taxier (ESMC)

COMMISSION ATTENDEES: Daniel Taxier (ESMC), Richard McCallion (EXHR)

NON-COMMISSION ATTENDEES: Contact ASTM for attendee list.

SUMMARY OF MEETING:

This was the fall general meeting of ASTM Committee F24 on Amusement Park Rides and Devices. The committee meets semiannually. The related subcommittees and task groups met to discuss ongoing standards development and other factors pertaining to the safety of amusement park rides. CPSC Staff attended the following group meetings:

F24.70 Strategy Session

The Water Related Amusement Rides and Devices task group discussed tasks for the group going forward, including a review of existing task groups and the formation of a new task group to discuss surfing pools. The group also discussed "floating water parks." These structures float in large bodies of water, and combine typical water devices such as slides and inflatables with other amusement devices such as trampolines. These structures seem to have unique safety risks, which are being reviewed by the group.

F24.20 Specifications and Terminology

The task group discussed a recent ballot with over 60 items in which dictionary definitions were proposed to be removed from F747-15 Standard Terminology Relating to Amusement Rides and Devices. Voting was ongoing at the time of the meeting.

F24.24 Task Group on Patron Clearance Envelope

The task group is addressing an error in the patron clearance envelope calculation in ASTM F2291. The group reviewed the results of the previous ballots, and after receiving persuasive negatives, plans to ballot new language to address the concerns.

F24.24 Task Group on F1193 - Standard Practice for Quality, Manufacture, and Construction of Amusement Rides and Devices

The task group reviewed past ballots relating to the term "commercial-off-the-shelf," the certification process, and other issues. Negative votes were found persuasive; the task group leader will follow-up with those voters to determine how their concerns can best be addressed in a future ballot.

F24.24 Task Group on F2291 Acceleration

The task group discussed much of the work in progress, including past ballots. The active topics included:

- Review of a ballot which attempted to expand or redefine the "prone" restraint area.
- A review of Delta V limits (limits on short bursts of acceleration).

- Harmonization with an MLIT Japan proposal to place limits on lateral acceleration.
- A review of bumper car acceleration limits and data collection methods.
- A discussion of wood coaster restraints.
- Review of a ballot which included special considerations for design when a head-mounted display is used.

Additionally, the task group continued to discuss a request to harmonize with *ISO 17842 – Safety of amusement rides and amusement devices* and *EN 13814 – Safety of amusement rides and amusement devices*. In particular, ISO is looking to incorporate the technical specification *ISO 17929 – Biomechanical effects on amusement ride passengers* into ISO 17842. The task group will evaluate the technical specification to determine whether any pertinent information should be added to ASTM F2291. Limited progress was made on this issue since the last meeting due to COVID-19.

F24.24 Task Group on Orphan Rides

The task group is continuing work to give guidance on best practices for product lifecycle management (PLM) of rides which no longer have an active original equipment manufacturer or OEM. The presenters gave an overview of the balloted Lifecycle standard.

F24.24 Task Group on Loads & Strengths

This task group discussed ongoing standards development regarding language about load factors, reference updates, and a review of non-mandatory language. New ballots on these items are expected.

F24.24 Task Group on Ride Modifications

The task group discussed moving away from the major/minor modification classifications in the current F24 standards, and instead doing an impact evaluation and risk assessment. The group is coordinating with the Orphan Ride and Risk Assessment task groups to use common language.

F24.24 Task Group on AR/VR

The task group reviewed previously balloted language addressing the use of AR/VR headsets, and discussed new proposed language. The group also viewed a presentation from a representative of UL discussing wearable equipment safety. The presentation included information about how UL is evaluating devices that use UV-C to inactivate bacteria and viruses (including COVID-19).

F24.80 Global Standard Harmonization

The group discussed ongoing efforts to harmonize ASTM F24 standards with ISO TC254 and EN TC152, and progress with disseminating ASTM F24 standards internationally and within the United States. Currently, ride safety regulations are adopted in 46 states, 41 of which specifically reference ASTM F24 standards. The task group also discussed an ongoing effort to identify and review amusement rides and devices that are used on cruise ships and cruise ship excursions, and to determine what standards should be adopted or created for the cruise ship industry.

F24.24 Task Group on Restraints

The task group discussed negatives on past ballots which were attempting to provide guidance to designers/engineers regarding the design of restraint and containment systems for body sizes that differ significantly from the norm, as these riders will react differently to certain restraint types. The next proposal is to place this language in a non-mandatory appendix. The task group is also in the process of harmonizing language with *EN 13814 – Safety of amusement rides and amusement devices*.

F24.90 Task Group on Ride Analysis (Risk Assessment)

The task group is developing a new core standard that will provide guidance for designers to conduct a safety-based risk assessment of amusement park rides and devices. The standard should be harmonized with *ISO 12100 – Safety of Machinery – General principles for design – Risk assessment and risk reduction* and *ANSI B11.0 – Safety of Machinery*. An early draft has been balloted to F24; after receiving feedback and reorganizing per ASTM guidelines, another draft should be expected in 2021.

F24.90 EVO Group #1

This task group has been working since 2017 to address corrosion issues as related to Design/Engineering. The group discussed ongoing work in F2291 to address prevention of water pooling, corrosion detection, and prevention of internal structural failures. The proposed changes were balloted. Of three negatives, two have agreed to withdraw; the third will be contacted. Aspects of these issues that could not be addressed in F2291 are being addressed by the Orphan Rides task group and the Risk Assessment task group. Other issues not directly related to corrosion, such as UV degradation of plastics and composites, may be addressed in the Loads and Strengths task group.

F24.90 EVO Group #2

This task group has been working since 2017 to address corrosion issues as related to Manufacturing/Operations/Maintenance. The group discussed ongoing work in F770 to add requirements for document retention related to maintenance and major modifications. The group discussed how it has consistently received negatives related to setting a specific timeframe for document retention. Draft language was discussed requiring a record retention program to be implemented with a schedule that meets the needs of operations, maintenance, inspection, training programs, and legal requirements. This language is expected to be balloted in the next cycle.

Contact ASTM for meeting minutes. The next general meeting is expected to take place February 24 through February 27, 2021 at Hilton Atlanta in Atlanta, GA.