



# Technical Standards Program

## ESTA Standards Watch

Late March 2024

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### NATEAC registration open to the public

NATEAC registration is open! The registration cost of \$850 includes two full days of high-level sessions on the topic of Access, as well as the fan-favorite kickoff harbor cruise Saturday night, an after-party on Monday night—post education sessions—and the NATEAC Tuesday Theatre Tours, where attendees can tour some of the most state-of-the-art performance spaces in the city. Tickets to the Behind the Scenes charity dinner are available during registration for \$175 each. Proceeds from ticket sales will be donated to help BTS in their mission to fund grants for industry workers who are seriously ill or injured. Visit [nateac.org](http://nateac.org) for more information and to register.

### Ten ESTA standards in public review

Ten ESTA standards are in public review at <http://estalink.us/pr>.

#### Comments due before 8 April 2024.

#### **BSR ES1.2-202x, Event Safety - Planning and Management** (new standard)

This standard gives overall guidance on the general aspects of planning and management for special events.

#### **BSR E1.64-202x, Stage Machinery Motion Control** (new standard)

This document provides a common standard of design, operation, maintenance and practices for the control of all stage machinery. It offers a complete look at how stage machinery is controlled in the Entertainment Industry. It addresses control schema requirements, from the Operator Interface (pushbuttons, software, touch surface) through the wiring (data or discrete I/O) along the path to the controller (analog, digital, relay coils), through the controller output and along a second path of wiring (machine power, data, analog signals, discrete I/O), to the machine. The document provides advice and guidance on usage of drives, contactors, emergency stop systems, cable termination, cable selection, data transmission and operator interfaces.

**BSR E1.30-11-2019 (R202x), EPI 33. ACN Root Layer Protocol Operation on TCP** (reaffirmation of ANSI E1.30-11-2019)

ANSI E1.30-11-2019 (EPI 33) specifies the operation and formats for the ACN Root Layer Protocol [Arch] operating on [TCP].

**BSR E1.20-202x, Entertainment Technology - RDM-Remote Device Management over USITT DMX512 Networks** (revision of ANSI E1.20 – 2010)

This standard describes a method of bi-directional communications over a USITT DMX512/1990 or ANSI E1.11 - 2004 data link between an entertainment lighting controller and one or more remotely controlled lighting devices. The protocol was written to work with the ANSI E1.11-2004 control standard, but will work equally well with the current 2009 version of E1.11. It allows discovery of devices on a DMX512/E1.11 network and the remote setting of DMX starting addresses, as well as status and fault reporting back to the control console.

**BSR E1.43-202x, Entertainment Technology - Performer Flying Systems** (revision of ANSI E1.43 – 2016)

This standard establishes a minimum level of performance parameters for the design, manufacture, use, and maintenance of performer flying systems used in the production of entertainment events. The purpose of this guidance is to achieve the adequate strength, reliability, and safety of these systems to ensure safety of the performer, other production personnel, and audiences under all circumstances associated with performer flying.

**BSR E1.51-202x, The Selection, Installation, and Use of Single-Conductor Portable Power Feeder Cable Systems for Use at 600 Volts Nominal or Less for the Distribution of Electrical Energy in the Television, Film, Live Performance and Event Industries in Canada** (revision of ANSI E1.51 – 2018)

This standard gives guidance on how to safely use single-conductor portable power feeder cable, a power distribution technique about which the Canadian Electrical Code is largely silent.

**BSR E1.60-202x, Guidelines for the Use of Raked Stages in Live Performance Environments** (revision of ANSI E1.60 – 2018)

This standard provides guidance for the use of raked stages in live performance environments to mitigate the risks for the protection of actors and technicians.

**Comments due before 13 May 2024**

**BSR E1.31, Lightweight streaming protocol for transport of DMX using ACN** (revision of ANSI E1.31 – 2018)

This standard describes a mechanism to transfer DMX512A packets over a TCP/IP network using a subset of the ACN protocol suite. It covers data format, data protocol, data addressing, and network management, including support for both IPv4 and IPv6. It also outlines a synchronization method to help ensure that multiple sinks can process this data concurrently when supervised by the same controller. Revision is necessary to correct internal reference errors within the currently published version, ANSI E1.31-2018.

**Comments due before 20 May 2024**

**BSR E1.44-2014 (R20xx) Common Show File Exchange Format for Entertainment Industry Automation Control Systems - Stage Machinery** (reaffirmation of ANSI E1.44 – 2014)

This standard addresses common show file requirements for automated stage machinery control systems used in entertainment venues. It establishes a minimum level of design and performance guidelines for the integrated software design of processor based machinery control equipment. The purpose of this guidance is to ensure that users will be able to transfer, modify and customize a 'least common denominator' show file for the data required

to tour entertainment productions from one facility to another, even when the facilities' physical conditions, hoist inventories, and placements, and the machinery control consoles and data topology differ.

### **BSR E1.50-1, Requirements for the Structural Support of Temporary LED, Video & Display Systems** (revision of ANSI E1.50-1 – 2017)

This draft is a revision of ANSI E1.50-1-2017. It provides updated guidance for lateral design loads, and for situations where technicians must climb on the structure at any time during installation, use, and dismantle.

### **ASSP Meeting Notice**

The American Society of Safety Professionals (ASSP) is the secretariat for the ASSP Z359 Committee for Fall Protection and Fall Arrest. The next Z359 meeting will take place in person on April 16-18, 2024. Those interested in participating can contact ASSP for additional information at [L.Bauerschmidt@assp.org](mailto:L.Bauerschmidt@assp.org).

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### **ANSI public review announcements**

The following documents have been announced for public review by ANSI and may be of material interest to *Standards Watch* readers. If you have comments on them, please send your comments before the deadline to the person indicated and to ANSI's Board of Standards Review at [psa@ansi.org](mailto:psa@ansi.org).

#### **Due 14 April 2024**

#### **BSR/UL 3300-202x, Standard for Safety for Service, Communication, Information, Education and Entertainment Robots - SCIEE Robots** (new standard)

The following is being recirculated for your review: (1) The Proposed First Edition of the Standard for Safety for Service, Communication, Information, Education and Entertainment Robots – SCIEE Robots.

View changes and send comments (copy [psa@ansi.org](mailto:psa@ansi.org)) to: <https://csds.ul.com/ProposalAvailable>

#### **BSR/UL 147-202X, Standard for Safety for Hand-Held Torches for Fuel Gases** (revision of ANSI/UL 147-2021)

(1) Topic – MAPP is no longer in production; additional changes.

View changes and send comments (copy [psa@ansi.org](mailto:psa@ansi.org)) to: <https://csds.ul.com/ProposalAvailable>.

#### **BSR/UL 147A-202X, Standard for Safety for Nonrefillable (Disposable) Type Fuel Gas Cylinder Assemblies** (revision of ANSI/UL 147A-2019)

(1) Topic – MAPP is no longer in production.

View changes and send comments (copy [psa@ansi.org](mailto:psa@ansi.org)) to: <https://csds.ul.com/ProposalAvailable>.

#### **BSR/UL 1479-202x, Standard for Fire Tests of Penetration Firestops** (revision of ANSI/UL 1479-2023)

These requirements cover through-penetration firestops of various materials and construction that are intended for use in openings in fire-resistive wall, floor or floor-ceiling assemblies, and membrane-type penetration firestops of various materials and construction that are intended for use in openings in fire-resistive wall assemblies. 1.2 The method of testing penetration firestops as specified by these requirements consists of exposure of test samples to a fire of standard time and temperature and to an application of a hose stream. Ratings are then established on the basis of: (a) The length of time the firestop resists fire before the first development of through openings or flaming on the unexposed surface; (b) Acceptable limitation of thermal transmission; and (c) Acceptable performance under the application of the hose stream. 1.3 The method of testing also includes optional air leakage tests to determine the rate of air leakage through penetration firestop systems resulting from a specified air-pressure difference applied across the surface of the systems. 1.4 The method of testing also includes optional water leakage tests to determine the ability of penetration firestop systems to resist the passage of water under a three foot pressure head. This method does not evaluate the ability of uncured firestop systems to resist such exposure.

View changes and send comments (copy [psa@ansi.org](mailto:psa@ansi.org)) via: <https://csds.ul.com/ProposalAvailable>

#### **Due 29 April 2024**

#### **BSR/C137.10-202X, Standard for Lighting Systems - Sensor Data Models** (new standard)

This standard defines the data model for sensors (focused on but not limited to outdoor) to present to Network Lighting Controllers (NLC). The sensor applications and item types defined in this document are intended to leverage elements of existing data models such as Open Mobile Alliance, Digital Illumination Interface Alliance (DiiA), and TALQ. This standard does not apply to the internal communications of NLC integrated devices or by what protocol the data is transported from the sensor to NLC or from NLC to CMS.

Single copy price: \$100.00

Obtain an electronic copy from and send comments to: [michael.erbesfeld@nema.org](mailto:michael.erbesfeld@nema.org)

**BSR/UL 486G-202x, Standard for Sealed Twist-On Connecting Devices** (revision of ANSI/UL 486G-2018 (R2022))

The proposed second edition of the Standard for Sealed Twist-On Connecting Devices, UL 486G, including the following revision: (1) alternate information means.

Single copy price: Free

Obtain an electronic copy from and send comments at: <https://csds.ul.com/ProposalAvailable>

**Due 6 May 2024**

**BSR/NFPA 160-202x, Standard for the Use of Flame Effects Before an Audience** (revision of ANSI/NFPA 160-2021)

This standard shall provide requirements for the protection of the audience, support personnel, performers, the operator, assistants, and property where flame effects are used.

Obtain an electronic copy from and send comments at: [www.nfpa.org/160Next](http://www.nfpa.org/160Next)

**BSR/NFPA 780-202x, Standard for the Installation of Lightning Protection Systems** (revision of ANSI/NFPA 780-2023)

This document shall cover traditional lightning protection system installation requirements for the following: (1) Ordinary structures; (2) Miscellaneous structures and special occupancies; (3) Heavy-duty stacks; (4) Structures containing flammable vapors, flammable gases, or liquids that can give off flammable vapors; (5) Structures housing explosive materials; (6) Wind turbines; (7) Watercraft; (8) Airfield lighting circuits; and (9) Solar arrays. This document shall address lightning protection of the structure but not the equipment or installation requirements for electric generating, transmission, and distribution systems except as given in Chapter 9 and Chapter 12.

Obtain an electronic copy from and send comments at: [www.nfpa.org/780Next](http://www.nfpa.org/780Next)

**BSR/NFPA 855-202x, Standard for the Installation of Stationary Energy Storage Systems** (revision of ANSI/NFPA855-2023)

This standard applies to the design, construction, installation, commissioning, operation, maintenance, and decommissioning of stationary energy storage systems (ESSs), including mobile and portable ESSs installed in a stationary situation and the storage of lithium metal or lithium-ion batteries.

Obtain an electronic copy from and send comments at: [www.nfpa.org/855Next](http://www.nfpa.org/855Next)

**BSR/NFPA 1124-202x, Code for the Manufacture, Transportation, and Storage of Fireworks and Pyrotechnic Articles** (revision of ANSI/NFPA 1124-2022)

This code shall provide regulations for the construction, use, and maintenance of buildings and facilities for the following: (1) The manufacture and storage of fireworks, novelties, and pyrotechnic articles at manufacturing facilities; (2) The storage of display fireworks, pyrotechnic articles, salute powder, pyrotechnic and explosive compositions, and black powder at other than display sites; (3) The storage of consumer fireworks at display fireworks storage facilities; and (4) The transportation on public highways of fireworks, pyrotechnic articles, and components thereof containing pyrotechnic or explosive materials. This code shall not apply to the retail sales and related storage of consumer fireworks at the same site.

Obtain an electronic copy from and send comments at: [www.nfpa.org/1124Next](http://www.nfpa.org/1124Next)

**BSR/NFPA 1126-202x, Standard for the Use of Pyrotechnics Before a Proximate Audience** (revision of ANSI/NFPA1126-2021)

This standard shall provide requirements for the protection of property, operators, performers, support personnel, and the viewing audiences where pyrotechnic effects are used indoors or outdoors with a proximate audience.

Obtain an electronic copy from and send comments at: [www.nfpa.org/1126Next](http://www.nfpa.org/1126Next)

**Due 13 May 2024**

**BSR/E1.31-202x, Entertainment Technology - Lightweight streaming protocol for transport of DMX512 using ACN** (revision of ANSI E1.31-2018)

This standard describes a mechanism to transfer DMX512A packets over a TCP/IP network using a subset of the ACN protocol suite. It covers data format, data protocol, data addressing, and network management, including support for both IPv4 and IPv6. It also outlines a synchronization method to help ensure that multiple sinks can process this data concurrently when supervised by the same controller. Revision is necessary to correct internal reference errors within the currently published version, ANSI E1.31-2018.

Single copy price: Free

Obtain an electronic copy and review forms at: [https://tsp.esta.org/tsp/documents/public\\_review\\_docs.php](https://tsp.esta.org/tsp/documents/public_review_docs.php)

**BSR/IES TM-40-202x, Technical Memorandum: IES Method for Determining Correlated Color Temperature (CCT) and Distance from the Planckian Locus of Light Sources** (new standard)

This TM will formalize a recommended method for calculating CCTxx and Dxx so that, with the same input, different users can have an identical output; (b) It will provide data to calculate values in the CIE 1960 UCS (i.e., CCT and Duv); (c) It will describe how the methods can be applied to other CMFs/UCSs, including a proposed naming convention; (d) It will document limitations of the quantities and provide guidance on appropriate use.

Single copy price: \$25.00

Obtain an electronic copy from and send comments to: [pmcgillicuddy@ies.org](mailto:pmcgillicuddy@ies.org)

**BSR/IES TM-30-202x, Technical Memorandum: IES Method for Evaluating Light Source Color Rendition** (revision of ANSI/IES TM-30-2018)

This document is a tool comprising a set of measures that are all based on a standardized calculation procedure. The method is based on theoretically comparing the appearance of a set of color samples as rendered by a test light source and a reference illuminant, quantified with a model of human vision. Thus, the method includes three primary components: a system for defining the reference illuminant, specification of the color samples, and implementation of a model of human vision. An overview of each component is provided here. The method described in this document compares color samples as rendered by a given test source and a reference illuminant at the same correlated color temperature (CCT), with the reference illuminant being Planckian radiation up to and including 4000 K, a proportional blend of Planckian radiation and a CIE D Series Illuminant between 4001 K and 4999 K, or a CIE daylight (D) series illuminant at or above 5000 K.

Single copy price: \$24.00

Obtain an electronic copy from and send comments to: [pmcgillicuddy@ies.org](mailto:pmcgillicuddy@ies.org)

**BSR/IES TM-32-24-202x, Technical Memorandum: Lighting Parameters for Building Information Modeling** (revision of ANSI/IES TM-32-2019)

This Technical Memorandum (TM) provides a recommended standardization of parameters attached to objects, object libraries, or parametric features that represent luminaires for use in many different types of BIM software. This BSR/IES TM-32-24 revision provides specific parameter definitions, and an associated shared parameters file, that are recommended to be used for use when developing lighting content for building information models. For each parameter, the following information is recommended: - Parameter Grouping - Parameter Name - Description - Tool Tip definition (for use specifically in Autodesk Revit\*) - Data Type - GUID (for use specifically in Autodesk Revit\*)

Single copy price: \$25.00

Obtain an electronic copy from and send comments to: [pmcgillicuddy@ies.org](mailto:pmcgillicuddy@ies.org)

**BSR/UL 60745-2-20-2009 (R202x), Hand-Held Motor-Operated Electric Tools - Safety - Part 2-20: Particular Requirements for Band Saws** (reaffirmation of ANSI/UL 60745-2-20-2009)

Reaffirmation and continuance of the First Edition of the Standard for Safety for Hand-Held Motor-Operated Electric Tools - Safety - Part 2-20: Particular Requirements for Band Saws, UL 60745-2-20, as an American National Standard.

Single copy price: Free

Obtain an electronic copy from and submit comments via: <https://csds.ul.com/ProposalAvailable>

## New ANS projects

ANSI has announced the following new projects that might materially affect *Standards Watch* readers—or at least be interesting. Contact the developer if you (a) want to be involved in a project, (b) object to a project and wish it to be abandoned, or (c) if you would like to point out that a scope is covered by an existing standard, thereby possibly making a project redundant or conflicting.

### **BSR/AWS F2.3M-202x, Specification for Use and Performance of Transparent Welding Curtains and Screens** (revision of ANSI/AWS F2.3M-2019)

This standard addresses the testing, selection and safe use of transparent welding curtains and screens. These devices are designed to provide outside viewers, at some distance from the welding arc or operation, a safe view of the operation and operator.

### **BSR/AWS F4.2-202x, Safety Guidelines for Proper Selection of Welding Cables** (revision of ANSI/AWS F4.2-2019)

This document provides guidance on the safe and proper selection of welding cables. This includes identifying specific criteria including minimum copper content, gauge sizing, electrical performance, and resistance for welding cable sizes.

### **BSR/CSA C22.2 No. 19085-1-202x, Woodworking machines — Safety — Part 1: Common requirements** (national adoption of ISO 19085-1 with modifications and revision of ANSI/CSA C22.2 No. 19085-1-2019)

This is to adopt the latest edition of ISO 19085-1 standard, with modifications.

### **BSR ICEA S-138-738-202x, Power Cables Rated 2000 Volts or Less for use Between Variable Frequency Drives and Motors** (new standard)

This standard applies to materials, constructions, and testing of 2000 volts and less crosslinked polyethylene, and crosslinked rubber insulated wires and cables used between a variable frequency drive's output and a motor for use in normal conditions of installation and service, either indoors, outdoors, or underground.

### **BSR C136.13-202X, Roadway and Area Lighting Equipment - Metal Brackets for Wood Poles** (revision of ANSI C136.13-2020)

This standard covers metal pipe, tubing, and structural brackets for wood poles designed to support luminaires of generally spherical, ellipsoidal, or rectangular shapes used in roadway and area lighting.

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## Projects Withdrawn

In accordance with clause 4.2.1.3.2 Withdrawal by ANSI-Accredited Standards Developer of the ANSI Essential Requirements, the following American National Standards have been withdrawn as an ANS.

**ANSI/TIA 4950-B-2020**, Requirements for Battery-Powered, Portable Land Mobile Radio Applications in Class I, II, III, Division I, Hazardous (Classified) Locations (revision and redesignation of ANSI/TIA 4950-A-2014) Send comments (copy [psa@ansi.org](mailto:psa@ansi.org)) to: Questions may be directed to: Teesha Jenkins <[tjenkins@tiaonline.org](mailto:tjenkins@tiaonline.org)>

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## Final actions on American National Standards

The documents listed below may be of interest to Standards Watch readers and have been approved by the ANSI Board of Standards Review or by an ANSI-Audited Designator on the date noted. "Final actions" means "done for now." No standard is ever finished.

**ANSI/ASTM E2849-2018 (R2024)**, Practice for Professional Certification Performance Testing (reaffirmation of ANSI/ASTM E2849-2018) Final Action Date: 20 February 2024

## **Draft IEC & ISO documents**

This section lists documents reported in ANSI's *Standards Action* that the IEC or the ISO or both are considering for approval and that may be of interest to *Standards Watch* readers. Anyone interested in reviewing and commenting should order a copy from their national representative and submit their comments through them. Comments from US citizens on ISO documents must be sent to ANSI's ISO Team ([isot@ansi.org](mailto:isot@ansi.org)), and must be submitted electronically in the approved ISO template as a Word document. US comments on IEC documents should be sent to Tony Zertuche, General Secretary, USNC/IEC, at ANSI's New York offices ([tzertuche@ansi.org](mailto:tzertuche@ansi.org)). ISO and IEC Drafts can be made available by contacting ANSI's Customer Service department, [sales@ansi.org](mailto:sales@ansi.org).

**ISO/DIS 11908**, Binders for paints and varnishes - Amino resins - General methods of test - 5/24/2024, \$40.00

**110/1634/CD, IEC TR 62715-6-61 ED1**: Flexible display devices - Stretchable displays Part 6-61: General introduction for stretchable display device - deformation and usage scenarios, 05/17/202434C/1596/FDIS, IEC 61347-1 ED4: Controlgear for electric light sources - Safety - Part 1: General requirements, 3 May 2024

**34C/1598/FDIS, IEC 61347-2-11 ED2**: Controlgear for electric light sources - Safety - Part 2-11: Particular requirements - Miscellaneous electronic circuits used with luminaires, 3 May 2024

**34C/1599/FDIS, IEC 61347-2-13 ED3**: Controlgear for electric light sources - Safety - Part 2-13: Particular requirements - Electronic controlgear for LED light sources, 3 May 2024

**34C/1597/FDIS, IEC 61347-2-2 ED3**: Controlgear for electric light sources - Safety - Part 2-2: Particular requirements - Electronic step-down convertors for filament lamps, 3 May 2024

**34/1181/CD, IEC 61547 ED4**: Equipment for general lighting purposes - EMC immunity requirements, 14 June 2024

**34/1183/CD, IEC 63129/AMD1 ED1**: Amendment 1 - Determination of inrush current characteristics of lighting products, 14 June 2024

**34/1184/DTR, IEC TR 63540 ED1**: Lighting systems - Characteristics for selected outdoor applications, 17 May 2024

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## **Recently published ISO & IEC documents**

Listed here are documents recently approved by the ISO or IEC and listed in ANSI's *Standards Action* that may be of use or interest to *Standards Watch* readers. Prices shown are for purchases from the [ANSI Webstore](#).

**ISO 6273:2024**, Assistive products - Accessibility guidelines and requirements to survey the needs of persons with sensory disabilities for assistive products and services, \$166.00

## **ESTA Standards Watch**

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### **Editors**

Erin Grabe, Executive Director  
ESTA  
PO Box 23200  
Brooklyn, NY 11202-3200 USA  
erin.grabe@esta.org  
1 212 244 1505 ext. 606

Karl G. Ruling, Senior Technical Standards Manager  
ESTA, Technical Standards Program  
PO Box 23200  
Brooklyn, NY 11202-3200 USA  
[karl.ruling@esta.org](mailto:karl.ruling@esta.org)  
1 212 244 1505 ext. 703

If you would like to receive an email notice each time a new edition of *Standards Watch* is published, send a request to [standards@esta.org](mailto:standards@esta.org). Find back issues at <http://estalink.us/nn7a1>.

### **TSP meetings**

The next set of TSP working group meetings are scheduled to be held at New York City College of Technology in Brooklyn, NY, coinciding with NATEAC. Visit <https://esta.org/ESTA/meetings.php> for links to hotel booking, discounted flights through United Airlines, and the latest meeting schedule, when available.



## Investors in Innovation, supporters of ESTA's Technical Standards Program

This lists the donors who have made contributions in the last 12 months.

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ETC

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#### INVESTOR (\$3,000–\$9,999; >100 employees/members)

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Lycian Stage Lighting  
Niscon Inc.  
Tomcat Staging, Lighting and Support Systems

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**INVESTOR** (\$200–\$499; <20 employees/members)

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Harlequin Floors

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