



# Technical Standards Program

## ESTA Standards Watch

Late October 2019

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### One draft ESTA standard available for public review

A draft standard is available for public review on the ESTA TSP website at <http://estalink.us/pr>. Anyone materially affected by the document is invited to review it and to offer comments before the deadline. The review document is available for free; downloading it costs you nothing but your time. Comments are due before the end of the day on October 28. The review is over when October 29 starts.

**BSR E1.21, Entertainment Technology — Temporary Structures Used for Technical Production of Outdoor Entertainment Events**, is a revision of ANSI E1.21-2013 to deepen the requirements for operations

management plans, designated person responsibilities, and related requirements. E1.21 establishes a minimum acceptable level of design and performance parameters to ensure structural reliability, safety, and to establish a reasonable standard of care for temporary special event structures.

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## **ESTA chain hoist standard approved and published**

**ANSI E1.6-3 – 2019, *Selection and Use of Serially Manufactured Chain Hoists in the Entertainment Industry***, was approved by the ANSI Board of Standards Review on Monday, October 14, and published by ESTA on Wednesday, October 16. It can be downloaded at no cost from <http://tsp.esta.org/freestandards>, thanks to the sponsorship of ProSight Specialty Insurance. It also may be purchased for \$15 from ANSI's [eStandards Store](#) and [IHS Markit](#).

ANSI E1.6 - 2019 is part of the multi-part E1.6 powered rigging standards project. It establishes minimum safety requirements for the selection and use of serially manufactured electric link chain hoists having capacity of two tons or less in the entertainment industry. The 2019 edition is a revision of the 2012 edition, with changes made to update references, correct minor errors, and include new technologies.

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## **Register for 2020 NAMM Show with ESTAATNAMM**

ESTA has announced that registration is now open for the 2020 NAMM Show, running from January 16 through 19 in Anaheim, California. Registration is \$25 with the code ESTAATNAMM through November 1. Rates will double on November 2 and double again on January 6. The NAMM Show badge gets you free access to all of ESTA's curated education sessions, five days of training in Rigging, Safety, Lighting & Electrical, and Lighting Networking.

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## **Registration is open for 2020 New World Rigging Symposium**

Registration is now open for the 2020 New World Rigging Symposium taking place 31 March 31 through 1 April in Houston, TX in conjunction with the USITT Conference and Stage Expo. The event provides an opportunity for riggers and those interested in the entertainment rigging industry to network, discuss current issues and new technologies, and help shape the future of the industry. A complete schedule, session descriptions and a link to register are available at [www.esta.org/nwrs](http://www.esta.org/nwrs).

Over the two days participants will be given a range of opportunities to further their technical knowledge in sessions covering video wall rigging, automation and motorization, and tension grids. They'll keep up to date with codes and standards, have some of their most pressing questions answered by structural engineers, and learn about rigging for cinema and performer flying.

Jeanette Farmer will deliver the Keynote Address to open the Symposium. Her career spans more than three decades of professional theatre technical support, show production, concert/theatre lighting design, theatre design consulting and themed entertainment project management.

These sponsors have made the 2020 New World Rigging Symposium possible at the following sponsorship levels:

- Stage Rigging (Platinum);
  - ETC and J.R. Clancy (Gold);
  - Certex, Geiger Engineers, Kish Rigging, and TAIT (Silver);
  - CM-ET, H&H Specialties, The Light Source, Motion Labs, Reed Rigging, Prolyte Group, Texas Scenic Company, and To the Moon Rigging (Bronze).
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## **Revised carbon dioxide testing protocol**

A revised carbon dioxide testing protocol for fog effects is available on the ESTA TSP website at [https://tsp.esta.org/tsp/working\\_groups/FS/fogtesting.html](https://tsp.esta.org/tsp/working_groups/FS/fogtesting.html)

Material has been added at the beginning to tell people what to look for in a CO<sub>2</sub> meter. The Crowcon Safeguard II mentioned in the instructions is no longer on the market, but almost any CO<sub>2</sub> meter will do as long as it reads concentrations up to 5% or more. The step-by-step instructions are still for the Crowcon Safeguard II, but any competent fog technician should be able to adapt the instructions to the particular meter available.

Emphasis has been added about the importance of looking for high levels CO<sub>2</sub> in storage areas. CO<sub>2</sub> in an unvented store room where dry ice is kept can be deadly, causing a person to collapse in a few minutes and die a few minutes later if not quickly removed to a safe atmosphere.

Information also has been added about dry ice storage in "sealed containers." Don't seal them. People contact the ESTA office occasionally seeking advice about small effects, such as a bubbling cauldron. They often plan to buy only a little dry ice for the effect and keeping the small supply of pellets or chunks in a Thermos bottle or other small, well-insulated container. This is okay, as long as they don't seal the top. Google or Bing "dry ice bomb." The search results are entertaining or appalling, depending on your perspective, but probably no effects technician wants a container exploding in his hand.

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## **NATEAC 2020 calls for presenters**

The North American Theatre Engineering and Architecture Conference (NATEAC) is a quadrennial event featuring sessions on diverse topics relevant to the design and construction of performance venues throughout North America. The NATEAC producers are accepting session proposals for the upcoming conference to be held in July in New York City. The 2020 conference theme is loosely wrapped around music venues: large, small, new and old, repurposed, professional, non-profit, and community. Climate change and its impact on performance venues also will be highlighted.

Proposed session topics should be contemporary and of a caliber to match the stature of the audience. Proprietary product or process discussions are discouraged. Outright infomercials are forbidden. Please note that, in order to provide ample time for attendee participation at each session, the number of presenters for each session will be limited.

Please send proposal details, including potential presenters, to [Bill@NATEAC.org](mailto:Bill@NATEAC.org).

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## **NFPA merges NFPA 1983 with NFPA 2500. Comment deadline 15 November**

The National Fire Protection Association is in the process of merging NFPA 1983, *Standard on Life Safety Rope and Equipment for Emergency Services*, with NFPA 2500, *Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services*. As a result, public input is no longer being accepted on NFPA 1983. To submit a public input on the consolidated draft standard by the 15 November 2019 deadline, go to [NFPA 2500](#).

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## **WTO Technical Barrier to Trade notifications**

Notify US, the U.S. Department of Commerce's service to announce Technical Barrier to Trade filings, has announced a TBT that may be of interest to Standards Watch readers. If you have a problem with any TBTs, you can protest through your representative to the World Trade Organization. See the guidance documents at <http://tsapps.nist.gov/notifyus/data/guidance/guidance.cfm> or <http://ec.europa.eu/growth/tools-databases/tbt/en/tbt-and-you/being-heard/> for advice on filing objections.

### **Argentina Notification ARG/377**

**Date issued:** 11 October 2019

**Agency responsible:** Secretariat of Domestic Trade

**National inquiry point:** TBT-WTO Focal Point of the Argentine Republic

**Products covered:** Machinery and equipment (HS 84)

**Title:** Proyecto de Resolución "Marco regulatorio que establece los requisitos y características esenciales de diseño y fabricación a los que deberán adecuarse las máquinas y equipos que se comercialicen en el

Territorio Argentino" (Draft Resolution establishing the requirements and key design and manufacturing criteria to be met by machinery and equipment marketed within Argentina) (10 pages, in Spanish)

**Description of content:** The notified measure constitutes the regulatory framework establishing the basic quality and safety principles and requirements for machinery and equipment marketed within Argentina.

The notified draft text covers machinery and interchangeable equipment, safety components, lifting accessories, removable mechanical transmission devices, partially completed machinery, and cables, chains and webbing. Exclusions are listed in Article 2 of the notified draft text.

The notified measure will establish specific technical regulations and conformity assessment procedures for each product in the relevant category, provided that such products have the characteristics required, based on the guidelines set out in this regulatory framework.

Domestic manufacturers and importers of the products covered by the notified measure will be responsible for ensuring compliance with the technical requirements and conformity assessment procedures established, and those to be established by the specific regulations.

The notified measure will be implemented within the deadlines established in each of the specific regulations issued.

**Objective and rationale:** Consumer information, labelling; Prevention of deceptive practices and consumer protection; Protection of human health or safety; Quality requirements.

**Relevant documents:** Ley N° 24.240

<http://servicios.infoleg.gob.ar/infolegInternet/anexos/0-4999/638/texact.htm>

Decreto (DNU) N° 274/2019

<http://servicios.infoleg.gob.ar/infolegInternet/anexos/320000-324999/322236/norma.htm>

**Proposed date of adoption:** Not given by country

**Proposed date of entry into force:** Not given by country

**Final date for comments:** 10 December 2019

**Full text:** [https://tsapps.nist.gov/notifyus/docs/wto\\_country/ARG/full\\_text/pdf/ARG377\(spanish\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/ARG/full_text/pdf/ARG377(spanish).pdf)

### China Notification CHN/1383

**Date issued:** 16 October 2019

**Agency responsible:** State Administration for Market Regulation (SAMR)

**National inquiry point:** General Administration of Quality Supervision and Inspection and Quarantine of the People's Republic of China (AQSIQ)

**Products covered:** Cleaning Agents; Acyclic hydrocarbons (HS 2901); Halogenated derivatives of hydrocarbons (HS 2903); Other organic compounds (HS 2942); Organic surface- Active agents (other than soap); surface- Active preparations, washing preparations (including auxiliary washing preparations) and cleaning preparations, whether or not containing soap, other than those of heading 34.01 (HS 3402); Polishes and creams, for footwear, furniture, floors, coachwork, glass or metal, scouring pastes and powders and similar preparations (whether or not in the form of paper, wadding, felt, nonwovens, cellular plastics or cellular rubber, impregnated, coated or covered with such preparations), excluding waxes of heading 34.04 (HS 3405); Pickling preparations for metal surfaces; fluxes and other auxiliary preparations for soldering, brazing or welding; soldering, brazing or welding powders and pastes consisting of metal and other materials; preparations of a kind used as cores or coatings for welding electrodes or rods (HS 3810); Organic composite solvents and thinners, not elsewhere specified or included; prepared paint or varnish removers (HS 3814); Other products of the chemical industry

**Title:** National Standard of the P.R.C., Limit Standard for Volatile Organic Compounds Content in Cleaning Agents (8 pages in Chinese)

**Description of content:** This standard specifies the content limits of volatile organic compounds (VOCs) in industrial cleaning agents.

**Objective and rationale:** Protection of human health or safety; Protection of the environment; Quality requirements

**Proposed date of adoption:** Not given by country

**Proposed date of entry into force:** Not given by country

**Final date for comments:** 15 December 2019

**Full text:** [https://tsapps.nist.gov/notifyus/docs/wto\\_country/CHN/full\\_text/pdf/CHN1383\(simplified\\_chinese\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/CHN/full_text/pdf/CHN1383(simplified_chinese).pdf)

### China Notification CHN/1397

**Date issued:** 17 October 2019

**Agency responsible:** State Administration for Market Regulation (SAMR)

**National inquiry point:** General Administration of Quality Supervision and Inspection and Quarantine of the People's Republic of China (AQSIQ)

**Products covered:** Information Technology Equipment; Information technology (IT) in general

**Title:** National Standard of the P.R.C., Information Technology Equipment-Safety-Part 21: Remote Power Feeding (15 pages in Chinese)

**Description of content:** This section specifies the safety requirements of the remote feed communication circuit. This part applies to information technology equipment designed to supply and receive operating power via a telecommunication network, where the voltage exceeds the limits for TNV circuit.

**Objective and rationale:** Protection of human health or safety; Quality requirements

**Proposed date of adoption:** Not given by country

**Proposed date of entry into force:** Not given by country

**Final date for comments:** 16 December 2019

**Full text:** [https://tsapps.nist.gov/notifyus/docs/wto\\_country/CHN/full\\_text/pdf/CHN1397\(simplified\\_chinese\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/CHN/full_text/pdf/CHN1397(simplified_chinese).pdf)

### China Notification CHN/1398

**Date issued:** 17 October 2019

**Agency responsible:** State Administration for Market Regulation (SAMR)

**National inquiry point:** General Administration of Quality Supervision and Inspection and Quarantine of the People's Republic of China (AQSIQ)

**Products covered:** Information technology equipment; Information technology (IT) in general

**Title:** National Standard of the P.R.C., Information Technology Equipment-Safety-Part 22: Equipment to be Installed Outdoor (21 page(s), in Chinese)

**Description of content:** This section specifies additional safety requirements for information technology equipment designed to be installed outdoor. This part applies to information technology equipment designed to be installed outdoor, and also to the empty outdoor enclosures supplied for the use of housing information technology equipment outdoor.

**Objective and rationale:** Protection of human health or safety; Quality requirements

**Proposed date of adoption:** Not given by country

**Proposed date of entry into force:** Not given by country

**Final date for comments:** 16 December 2019

**Full text:** [https://tsapps.nist.gov/notifyus/docs/wto\\_country/CHN/full\\_text/pdf/CHN1398\(simplified\\_chinese\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/CHN/full_text/pdf/CHN1398(simplified_chinese).pdf)

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## ANSI public review announcements

The following documents have been announced for public review by ANSI. 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 18 November 2019

#### **BSR/AWS D16.5M/D16.5-201X, Training Guide for Robotic Arc Welding Personnel** (new standard)

Provides technical information necessary to train personnel in the safe and effective use of industrial welding robots and welding robot systems. The training guide includes a summary of the requisite education resources required for training and the emphasis will be placed on the training individuals in accordance with the principles of the AWS D16.4 Certified Robot Arc Welder (CRAW) program. The training guide is designed for use by all robot arc-welding personnel and it is not intended to be used exclusively in support of the CRAW program.

Single copy price: \$48.00

Order from: Jennifer Rosario, [jrosario@aws.org](mailto:jrosario@aws.org)

Send comments to: [adavis@aws.org](mailto:adavis@aws.org)

#### **BSR/BICSI 009-201x, Data Center Operations and Maintenance Best Practices** (new standard)

This standard provides requirements, recommendations, and best practices for the operation and maintenance of data centers including but not limited to standard operating procedures, emergency operating procedures, maintenance, governance, and management.

Single copy price: Free! Cheap at twice the price.

Order from and send comments to: [jsilveira@bicsi.org](mailto:jsilveira@bicsi.org)

**BSR/GBI 01-201x, Green Globes Assessment Protocol for Commercial Buildings** (revision of ANSI/GBI 01-2019)

The standard includes criteria and practices for resource-efficient, healthy, resilient, and environmentally preferable construction of commercial buildings. Six areas of green building design will be included: environmental/project management, site, energy, water, materials, and indoor environment.

Single copy price: \$25.00 USD

Obtain an electronic copy from: [https://www.thegbi.org/content/misc/ANSI-GBI\\_01-2019\\_Publication\\_-\\_final\\_6-14-19\\_.pdf](https://www.thegbi.org/content/misc/ANSI-GBI_01-2019_Publication_-_final_6-14-19_.pdf)

Send comments to: [comment@thegbi.org](mailto:comment@thegbi.org), using the public comment form at

[https://www.thegbi.org/content/misc/GBI-ANSI\\_Proposal\\_for\\_Change\\_or\\_Public\\_Comment\\_Form-final.docx](https://www.thegbi.org/content/misc/GBI-ANSI_Proposal_for_Change_or_Public_Comment_Form-final.docx)

**BSR Z136.5-201x, Standard for Safe Use of Lasers in Educational Institutions** (new standard)

This standard applies the requirements of the ANSI Z136.1 to the unique environments associated with educational institutions, including teaching laboratories, classrooms, lecture halls, science fairs as well as projects on and off campus, and science museums, when they incorporate lasers into their educational process. It is intended for staff and students using lasers for academic instruction in university, college, secondary, or primary educational facilities.

Single copy price: \$30.00

Obtain an electronic copy from: <https://www.lia.org/store/product/z1365-draft-public-review-electronic-american-national-standardsafe-use-lasers>

Send comments to: Liliana Caldero, [lcaldero@lia.org](mailto:lcaldero@lia.org)

**BSR Z136.7-201x, Standard for Testing and Labeling of Laser Protective Equipment** (new standard)

This standard addresses emerging laser technology protective requirements, e.g., broad-spectrum laser sources, ultrafast lasers systems, new high-power systems not previously handled; including testing methodology definitions, refinement of testing protocols and data supporting known damage thresholds as a function of laser source parameters and material solutions adopted. The scope of this standard is to provide recommendations for the testing requirements and labeling of protective equipment (devices) designed for use with lasers and laser systems that operate at wavelengths between 180 nm and 1 mm.

Single copy price: \$30.00

Obtain an electronic copy from: <https://www.lia.org/store/product/z1367-draft-public-review-electronic-american-national-standardtesting-and-labeling>

Send comments to: Liliana Caldero, [lcaldero@lia.org](mailto:lcaldero@lia.org)

**BSR/UL 2743-201x, Standard for Safety for Portable Power Packs** (Proposal dated 10-4-19) (revision of ANSI/UL 2743-2016)

The following is proposed: (1) Revise the exception for power packs used in a repair facility, and (2) Proposal to accept grounded receptacle for device power source having no conductive connection to any branch circuit.

Single copy price: Free!

Obtain an electronic copy from and offer comments at: <https://csds.ul.com/Home/ProposalsDefault.aspx>

**Due 25 November 2019**

**BSR/ASSP/ISO 31010-201x, Risk Management - Risk Assessment Techniques** (identical national adoption of ISO/IEC 31010:2019 and revision of ANSI/ASSE Z690.3-2011)

This International Standard provides guidance on the selection and application of techniques for assessing risk in a wide range of situations. The techniques are used to assist in making decisions where there is uncertainty, to provide information about particular risks and as part of a process for managing risk. The document provides summaries of a range of techniques, with references to other documents where the techniques are described in more detail.

Single copy price: \$110.00

Order from and send comments to: Lauren Bauerschmidt; [LBauerschmidt@assp.org](mailto:LBauerschmidt@assp.org)

**BSR/TIA 568.2-D-2-202x, Balanced Twisted-Pair Telecommunications Cabling and Components Standard - Addendum 2: Power Delivery Over Balanced Twisted-Pair Cabling** (addenda to ANSI/TIA 568.2-D-2018)

This document will be an addendum to TIA 568.2-D. The proposed addendum will provide normative requirements for supporting the delivery of power over installations balanced copper cabling, intended to supplement the material in TIA TSB-184-A. Requirements to include options for specific prescriptive requirements, partially engineered solutions, and completely engineered solutions which allow widely varying techniques but adhere to strict end requirements.

Single copy price: \$76.00

Order from and send comments to: TIA; [standards@tiaonline.org](mailto:standards@tiaonline.org)

**Due 2 December 2019**

**BSR/APCO 3.110.1-201x, Cyber Security Training for Public Safety Communications Personnel** (new standard)

This standard will provide guidance and direction in developing cyber security training programs that will help deal with emerging threats to the public safety communications sector. Training of telecommunicators, supervisors, network administrators, and multiple levels of management is critical to recognizing and mitigating numerous threats which include, but are not limited to viruses, trojans, denial-of-service attacks, and other intrusions by malicious actors. These attacks can result in data loss and system downtime. In order to maintain effective operation and delivery of public safety services this standard will address multiple levels, and types, of personnel training as it relates to an overall cyber security strategy for the emergency communications sector.

Single copy price: Free

Order from and send comments to: [apcostandards@apcointl.org](mailto:apcostandards@apcointl.org)

**BSR/ASHRAE Standard 105-202x, Standard Methods for Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions** (revision of ANSI/ASHRAE Standard 105-2014)

This revision of Standard 105 provides consistent methods for determining, expressing, and comparing the energy performance of and the greenhouse gas emissions associated with the design of new buildings and improvements to, or changes in, the operation of existing buildings.

Single copy price: \$35.00

Obtain an electronic copy from and offer comments at:

<http://www.ashrae.org/standards-research--technology/public-review-drafts>

**BSR/AWS D16.2M/D16.2-202x, Guide for Components of Robotic and Automatic Arc Welding Installations** (new standard)

This document applies to the recommended design, integration, installation, and use of industrial welding robotic and automatic systems. This document is intended for the gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), plasma arc welding (PAW), and flux-cored arc welding (FCAW) processes. Pertinent parts may address additional welding processes. Robotic and automatic arc welding systems consist of a manipulator, power source, arc welding torch and accessories, electrode feed system, wire delivery system, shielding gas delivery system, welding circuit, shielding and communication control, and grounding system. There may be other accessories that are outside the scope of this document, such as safety devices and monitoring, joint-tracking, and vision systems.

Single copy price: \$68.00

Order from and send comments to: [jrosario@aws.org](mailto:jrosario@aws.org)

**BSR/BICSI N3-202x, Planning and Installation Methods for the Bonding and Grounding of Telecommunication and ICT Systems and Infrastructure** (new standard)

This standard specifies aspects of planning and installation of bonding and grounding systems for telecommunications and ICT systems and infrastructure within a customer premises. Proper planning and installation provide for effective and optimal system performance of the bonding and grounding system, allowing the system to meet its objective in preventing damage to people or assets.

Single copy price: Free

Order from and send comments to: [jsilveira@bicsi.org](mailto:jsilveira@bicsi.org)

**BSR/IES TM-25-201x, Ray File Format for the Description of the Emission Property of Light Sources** (new standard)

In the past few decades, the optical design of illumination systems (non-imaging optics) has benefited greatly from the advances in computer hardware and software. Many commercially available ray-tracing optical design and simulation software programs have been developed to support a wide variety of optical design tasks. All of these software packages can use ray files as source models. Ray files are typically generated by light source manufacturers using either an optical simulation or physical measurements using near-field goniometers. These ray files are then put in a specific format for each optical design program, which allows optical engineers to integrate the light source characteristics into their optical system design simulations. Ray files describe light sources by a large number of rays with individual start location, direction, flux, and optional spectral and/or polarization data.

Single copy price: \$25.00

Order from and send comments to: Patricia McGillicuddy, [pmcgillicuddy@ies.org](mailto:pmcgillicuddy@ies.org)

**BSR C18.2M, Part 1-202x, Standard for Portable Nickel Rechargeable Cells and Batteries - General and Specifications** (revision of ANSI C18.2M, Part 1-2013)

This publication applies to portable rechargeable, or secondary, cells and batteries based on the following electrochemical systems: (a) Nickel-cadmium, (b) Nickel-metal hydride, and (c) Nickel-zinc.

Single copy price: \$TBD

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

**Due 10 December 2019**

**BSR/ASME B18.12-202x, Glossary of Terms for Mechanical Fasteners** (revision of ANSI/ASME B18.12-2012)

This standard is a summary of nomenclature and terminology currently used to define or describe mechanical fasteners, related characteristics, and the manufacturing processes that produce these products. Use of these terms by manufacturers and consumers is intended to reduce or eliminate confusion and serve as a sound basis for communication.

Single copy price: Free

Obtain an electronic copy from: <http://cstools.asme.org/publicreview>

Send comments to: Lawrence Chan, [chanl4@asme.org](mailto:chanl4@asme.org)

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## CSA public review announcements

The CSA Group has announced draft documents for public review that might be of interest to *Standards Watch* readers. To participate in CSA public reviews, please visit: <http://publicreview.csa.ca/>.

**Due 12 November 2019**

**C22.2 NO. 250.13, LED equipment for lighting applications** (new edition)

The requirements specified in this Standard cover light emitting diode (LED) equipment that is an integral part of a luminaire or other lighting equipment, and which operates in the visible light spectrum between 400 and 700 nm. These requirements also cover the component parts of LED equipment, including LED controlgear, controllers, arrays, modules, and packages, as defined in this standard.

**Due 23 November 2019**

**C22.1, Amendment - Canadian Electrical Code, Part I, Subject No. 4498, Clarification of voltage drop, Rule 8-102 1)a)** (amendment)

Revise Rule 8-102 as shown.

8-102 Voltage drop (see Appendices B and D)

1) The voltage drop in an installation shall be based on the connected load of the feeder or branch circuit if known; otherwise it shall be based on 80% of the rating of the overload or overcurrent device protecting the branch circuit or feeder, and not exceed

a) 3% in a feeder or branch circuit; ~~or~~ and

b) 5% from the supply side of the consumer's service (or equivalent) to the point of utilization.

**C22.1, Amendment - Canadian Electrical Code, Part I, Subject No. 4500, Replace Rule 10-614 and Table 16 with 2015 CE Code Rule 10-814, Table 16A, and Table 16B (amendment)**

(A) Revise Rule 10-614 by replacing it with Rule 10-814 from the 2015 CE Code as shown.

10-614 Size of system bonding jumper or bonding conductor (see Appendix B)

~~1) The size of a field-installed system bonding jumper shall not be less than that determined in accordance with Table 16 based on the ampere rating or setting of the overcurrent device protecting the ungrounded conductors.~~

~~2) The size of a bonding conductor installed in accordance with Rule 10-604 at service equipment shall not be less than that determined in accordance with Table 16 based on the allowable ampacity of the largest ungrounded conductor.~~

~~3) The size of a field-installed bonding conductor installed at other than service equipment shall not be less than that determined in accordance with Table 16 based on~~

~~a) the overcurrent device protecting the ungrounded conductors; or~~

~~b) the allowable ampacity of the largest ungrounded conductor for installations where the size of the circuit conductors is increased to compensate for voltage drop.~~

~~4) The size of a field-installed bonding conductor installed with each group of parallel conductors run in separate raceways or cables shall be in accordance with Subrule 3) divided by the number of groups of parallel conductors.~~

~~5) Notwithstanding Subrules 2), 3), and 4), the bonding conductor shall not be required to be larger than the current-carrying conductors.~~

~~6) A metal raceway that is permitted to be used as a bonding conductor shall be considered to meet the requirements of this Rule.~~

~~7) A bonding means that is integral to a cable assembly shall be considered to meet the requirements of this Rule.~~

1) The size of a bonding conductor or field-installed system bonding jumper shall be not less than that given in

a) Table 16A for wire and cable installations; or

b) Table 16B for busbar installations.

2) Notwithstanding the requirements of Rule 12-108, the size of the bonding conductor in each parallel run shall be permitted to be smaller than No. 1/0 AWG.

3) Where circuit conductors are paralleled in separate cables, raceways, or busbars, the bonding conductor shall be paralleled and the size of bonding conductor in each parallel run shall not be less than that specified in

a) Table 16A based on the size of the associated circuit conductors contained in the raceway or cable; or

b) Table 16B based on the ampacity of the associated busbar.

4) Notwithstanding Subrules 1), 2), and 3), the bonding conductor shall be permitted to be not larger than the largest ungrounded conductor in the circuit.

The proposal also rewrites the explanatory material in Appendix B and replaces Table 16 with Tables 16A and 16B from the 2015 CE Code.

**C22.1, Amendment - Canadian Electrical Code, Part I, Subject No. 4506, Connection of low voltage secondary neutrals to station ground electrode (amendment)**

(A) Revise Subrule 36-308 6) as shown.

36-308 Connections to the station ground electrode (see Appendix B)

~~6) A transformer neutral on Except for low voltage secondary neutrals, the neutral conductor of solidly grounded neutral systems shall be connected to the station ground electrode by a copper conductor sized as follows:~~

~~a) conductors for grounding at the transformer primary and secondary neutrals, with a copper conductor sized shall be not less than No. 2/0 AWG and have sufficient ampacity to carry the maximum ground fault current of the transformer in accordance with Table 51, and this grounding conductor shall be in addition to the requirement of Subrule 2) b) i).; and~~

~~b) notwithstanding Item a), conductors shall be sized in accordance with Section 10 provided that the size selected is suitable for the maximum ground fault current on the transformer secondary~~

(B) Revise Appendix B Note for Rule 36-308 6).

The explanation for the requested changes points out conflicts between existing CEC rules, particularly when two or more solidly grounded separately derived systems with distributed neutrals are interconnected.

**Due 30 November 2019**

**C22.1, Amendment - Canadian Electrical Code, Part I, Subject No. 4510, Add IEC conductor sizes and ampacities to Tables 1 through 4 (amendment)**

The amendment does what the title says: It adds IEC wire sizes specified in mm<sup>2</sup> to the tables that now only show AWG wire sizes. The IEC wire sizes don't align with the AWG sizes, so this roughly doubles the choices of wire gauges that can be used.

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**DIN public review announcement**

The Deutsches Institut für Normung has announced a draft document possibly of interest to *Standards Watch* readers that is open for public review until 11 December 2019. The cost is 82.60 € from Beuth Verlag. The document is in German. After you register with DIN at <http://www.entwuerfe.din.de/>, you may purchase and comment on DIN draft standards.

**DIN 56927:2019-11, Veranstaltungstechnik - Sicherungsseil für zu sichernde Gegenstände bis 60 kg Eigengewicht - Maße, sicherheitstechnische Anforderungen und Prüfung** (Entertainment technology - Safety-cable to secure objects up to 60 kg self weight - Measures, requirements and testing)

This document applies to the manufacture of safety cables used as protection against dropping objects within the meaning of BGV C1/GUV-V C1. The safety cable is also regarded as a "second suspension" according to DIN VDE 0711-217 (VDE 0711-217). The possible drop distance must not be greater than 0.2 m. Changes from the 2013-07 edition include

- (a) deletion of specifications for the use of shackles as connecting elements;
  - (b) revisions to the tables for ready-made wire ropes;
  - (c) deletion of the informative Appendix B "Chains as securing elements"; and
  - (d) miscellaneous editorial revisions and changes to adapt to the current state of the art.
- 

**New ANS projects**

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

**BSR/ICC 605-201x, Standard for Residential Construction in Regions with Wildfire Hazard** (new standard)

Development of a comprehensive standard to specify enhanced prescriptive methodologies of wildfire-resistant design and construction details for buildings and other structures of wood-framed, steel-framed, concrete, or masonry construction sited in wildfire hazardous areas. This standard provides prescriptive details for walls, floors, roofs, foundations, windows, doors, and other applicable components of construction.

Contact: Karl Aittaniemi, [kaittaniemi@iccsafe.org](mailto:kaittaniemi@iccsafe.org)

**BSR/ICC 610-201x, Standard for Residential Construction in Regions with Seismic Hazard** (new standard)

Development of a comprehensive standard to specify enhanced prescriptive methodologies of seismic resistant design and construction details for buildings and other structures of wood-framed, steel-framed, concrete, or masonry construction sited in seismic hazardous areas. This standard provides a methodology to identify and retrofit specific known vulnerabilities in wood light-frame dwellings. Use of the provisions is anticipated to improve earthquake performance but is not intended to prevent earthquake damage.

Contact: Karl Aittaniemi, [kaittaniemi@iccsafe.org](mailto:kaittaniemi@iccsafe.org)

**BSR/ICC 615-201x, Standard for Residential Construction in Regions with Tsunami Hazard** (new standard)

Development of a comprehensive standard to specify enhanced prescriptive methodologies of tsunami-resistant design and construction details for buildings and other structures of wood-framed, steel-framed, concrete, or masonry construction sited in coastal regions susceptible to tsunamis. This standard provides prescriptive details

for walls, floors, roofs, foundations, windows, doors, and other applicable components of construction.  
Contact: Karl Aittaniemi, [kaittaniemi@iccsafe.org](mailto:kaittaniemi@iccsafe.org)

**BSR/NFPA 475-201x, Recommended Practice for Organizing, Managing, and Sustaining a Hazardous Materials/Weapons of Mass Destruction Response Program** (revision of ANSI/NFPA 475-2017)

This recommended practice provides the minimum criteria for organizing, managing, and sustaining a hazardous material response program (HMRP) based on the authority having jurisdiction's (AHJ) function and assessed level of risk. A review of the laws, regulations, consensus standards, and guidance documents in addition to guidance for risk assessment, HMRP planning, resource management, staffing, training, health and medical issues, financial management, programs influences, and developing relationships are covered in this recommended practice.

Contact: Dawn Michele Bellis, [dbellis@nfpa.org](mailto:dbellis@nfpa.org)

**BSR/CTA 2088.1-201x, Baseline Cybersecurity for Small Unmanned Aerial Systems** (new standard)

This standard will build upon the baseline cybersecurity requirements in CTA-2088 to address the cybersecurity requirements and recommendations relevant to the unique capabilities, uses, and applications of small UAS.

Contact: Veronica Lancaster, [vlancaster@cta.tech](mailto:vlancaster@cta.tech)

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## Final actions on American National Standards

The documents listed below have been approved by the ANSI Board of Standards Review or by an ANSI-Audited Designator on the date noted.

**ANSI/B11.19-2019**, Performance Requirements for Risk Reduction Measures: Safeguarding and Other Means of Reducing Risk (revision of ANSI B11.19-2010): 11 October 2019

**ANSI/E1.6-3-2019**, Selection and Use of Serially Manufactured Chain Hoists in the Entertainment Industry (revision of ANSI/E1.6-3-2012): 14 October 2019

**ANSI/UL 676-2019**, Standard for Safety for Underwater Luminaires and Submersible Junction Boxes (revision of ANSI/UL 676-2018): 14 October 2019

**ANSI/UL 8750-2019b**, Standard for Safety for Light Emitting Diode (LED) Equipment for Use In Lighting Products (proposal dated 7-26-19) (revision of BSR/UL 8750-201X): 11 October 2019

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## Draft IEC & ISO documents

This section lists proposed documents that the International Electromechanical Commission (IEC) is considering for approval and that may be of interest to *Standards Watch readers*. Anyone interested in reviewing and commenting on a document should order a copy from their national representative and submit their comments through them. Comments from US citizens on IEC documents should be sent to Charles T. Zegers at [czegers@ansi.org](mailto:czegers@ansi.org). Comments from US citizens on ISO documents should be sent to Karen Hughes at [isot@ansi.org](mailto:isot@ansi.org). Any prices, if shown, are for purchases through ANSI. The sort order is by due date then alphanumeric.

**65/771/DTR, IEC TR 63164-2 ED1**: Reliability of Industrial Automation Devices and Systems - Part 2: System reliability, 2 November 2019

**ISO/IEC DIS 9594-11**, Information technology - Open systems interconnection - The directory - Part 11: Protocol specifications for secure operations, 20 December 2019, \$146.00

**ISO/IEC DIS 30118-2**, Information technology - Open Connectivity Foundation (OCF) Specification - Part 2: Security specification, 20 December 2019, \$215.00

**ISO/IEC DIS 30118-3**, Information technology - Open Connectivity Foundation (OCF) Specification - Part 3: Bridging specification, 20 December 2019, \$125.00

**ISO/IEC DIS 30118-4**, Information technology - Open Connectivity Foundation (OCF) Specification - Part 4: Resource type specification, 20 December 2019, \$269.00

**ISO/IEC DIS 30118-5**, Information technology - Open Connectivity Foundation (OCF) Specification - Part 5: Smart home device specification, 20 December 2019, \$107.00

**ISO/IEC DIS 30118-6**, Information technology - Open Connectivity Foundation (OCF) Specification - Part 6: Resource to AllJoyn interface mapping specification, 20 December 2019, \$102.00

**ISO/IEC DIS 30118-7**, Information technology - Open Connectivity Foundation (OCF) Specification - Part 7: Wi-Fi easy setup specification, 20 December 2019, \$107.00

**ISO/IEC DIS 30118-8**, Information technology - Open Connectivity Foundation (OCF) - Part 8: Cloud specification, 20 December 2019, \$88.00

**ISO/IEC DIS 30118-9**, Information technology - Open Connectivity Foundation (OCF) - Part 9: OCF resource to one M2M resource mapping specification, 20 December 2019, \$165.00

**34/636/CDV, IEC 63129 ED1**: Determination of inrush current characteristics of lighting products, 3 January 2020

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## Recently published IEC & ISO documents

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

**IEC 62341-5-3 Ed. 2.0 en:2019**, Organic light emitting diode (OLED) displays - Part 5-3: Measuring methods of image sticking and lifetime, \$199.00

**S+ IEC 62341-5-3 Ed. 2.0 en:2019** (Redline version), Organic light emitting diode (OLED) displays - Part 5-3: Measuring methods of image sticking and lifetime, \$259.00

**IEC 62858 Ed. 2.0 b:2019**, Lightning density based on lightning location systems (LLS) - General principles, \$82.00

**S+ IEC 62858 Ed. 2.0 en:2019** (Redline version), Lightning density based on lightning location systems (LLS) - General principles, \$107.00

**ISO/IEC 9995-9/Amd1:2019**, Information technology – Keyboard layouts for text and office systems - Part 9: Multi-lingual, multiscript keyboard layouts - Amendment 1, \$19.00

**ISO 12944-5:2019**, Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 5: Protective paint systems, \$138.00

**ISO 13857:2019**, Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs, \$138.00

## TSP October 2019 meeting schedule

The following meetings will be at the Marriott Solana in Westlake, TX. The meeting schedule is posted at <https://esta.org/ESTA/meetings.php>.

Control Protocols IPv6 PIDs (RDM) Task Group	14:00 – 18:00	Saturday 26 October 2019
Control Protocols Next Gen Task Group	19:00 – 23:00	Saturday 26 October 2019
Control Protocols Next Gen Color Task Group	19:00 – 23:00	Friday 25 October 2019
Control Protocols Working Group	09:00 – 13:00	Saturday 26 October 2019
Electrical Power Working Group	19:00 – 23:00	Friday 25 October 2019
Event Safety Fire Safety TG	09:00 – 13:00	Saturday 26 October 2019
Event Safety Rigging Task Group	09:00 – 13:00	Friday 25 October 2019
Event Safety Working Group	14:00 – 18:00	Saturday 26 October 2019
Floors Working Group	09:00 – 13:00	Friday 25 October 2019
Fog & Smoke Working Group	14:00 – 18:00	Thursday 24 October 2019
Followspot Position Working Group	16:00 – 18:00	Friday 25 October 2019
Photometrics Working Group	14:00 – 18:00	Sunday 27 October 2019
Rigging E1.39	09:00 – 13:00	Saturday 26 October 2019
Rigging E1.67 TG	14:00 – 18:00	Friday 25 October 2019
Rigging Working Group	19:00 – 23:00	Saturday 26 October 2019
Stage Machinery Working Group	19:00 – 23:00	Thursday 24 October 2019
Stage Machinery E1.6-4 Task Group	09:00 – 13:00	Friday 25 October 2019
Stage Machinery E1.64 Task Group	14:00 – 18:00	Thursday 24 October 2019
Technical Standards Council	09:00 – 13:00	Sunday 27 October 2019

## TSP January 2020 meeting schedule

The following meetings will be at the Wyndham Garden Anaheim in conjunction with the 2020 NAMM Show. If attending NAMM, use code ESTAATNAMM now through 1 November for a \$25 registration. It costs more without it!

Control Protocols E1.20 TG	14:00 – 18:00	Wednesday 15 January 2020
Control Protocols E1.37-4 TG	19:00 – 23:00	Friday 17 January 2020
Control Protocols E1.37-5 TG	19:00 – 23:00	Wednesday 15 January 2020
Control Protocols E1.59 Automation Feedback TG	08:00 – 23:00	Thursday 16 January 2020
Control Protocols E1.68 Compliance TG	14:00 – 18:00	Thursday 16 January 2020
Control Protocols Next Gen Library	19:00 – 23:00	Saturday 18 January 2020
Control Protocols Next Gen Overall CG	14:00 – 18:00	Friday 17 January 2020
Control Protocols Working Group	09:00 – 11:30	Friday 17 January 2020
Event Safety Fire Safety TG	09:00 - 13:00	Saturday 18 January 2020
Event Safety Working Group	14:00 - 18:00	Saturday 18 January 2020
Floors Working Group	09:00 - 13:00	Saturday 18 January 2020
Followspot Position Working Group	09:00 - 13:00	Thursday 16 January 2020
Photometrics Working Group	15:00 - 18:00	Friday 17 January 2020
Rigging Working Group:	19:00 - 23:00	Friday 17 January 2020
Stage Machinery E1.6-4 TG	14:00 - 18:00	Friday 17 January 2020
Stage Machinery E1.64 TG	09:00 - 13:00	Thursday 16 January 2020
Stage Machinery Working Group	14:00 - 18:00	Thursday 16 January 2020
Technical Standards Council	09:00 - 13:00	Sunday 19 January 2020

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## ESTA Standards Watch

is distributed as a benefit to ESTA members and as a communication medium for participants in ESTA's Technical Standards Program. Original material is copyright the Entertainment Services and Technology Association.

### Editors:

Karl G. Ruling, Technical Standards Manager  
Entertainment Services and Technology Association  
630 Ninth Avenue, Suite 609  
New York, NY 10036  
USA  
[karl.ruling@esta.org](mailto:karl.ruling@esta.org)  
1 212 244 1505 ext. 703  
Fax 1 212 244 1502

Richard Nix, Asst. Technical Standards Manager  
Entertainment Services and Technology Association  
630 Ninth Avenue, Suite 609  
New York, NY 10036  
USA  
[richard.nix@esta.org](mailto:richard.nix@esta.org)  
1 212 244 1505 ext. 649  
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