



Technical Standards Program

ESTA Standards Watch

June 2020

Volume 24, Number 11

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Four draft TSP standards in public review

Four draft TSP standards are posted for public review on ESTA's TSP website. Comments are due on the first two draft standards before the end of the day June 28. Comments on the third are due on or before 13 July, and comments on the last are due before the end of the day on 3 August 2020. Check'em out at https://tsp.esta.org/tsp/documents/public_review_docs.php! It costs you nothing but your time.

BSR E1.6-1, Powered Rigging Systems. ANSI E1.6-1 - 2019 is being opened for limited revision, with the scope of revisions applying only to section 6.6 of the standard. The revisions are necessary to correct errata in that section only. No other revisions will be considered or made at this time.

BSR E1.39, Entertainment Technology - Selection and Use of Personal Fall Arrest Systems on Portable Structures Used in the Entertainment Industry. This standard establishes minimum requirements for the selection and use of personal fall arrest systems (PFAS) on portable structures in the entertainment industry. In addition, the standard establishes minimum requirements for products and portable structures used in the service of PFAS. The requirements for other methods used to protect workers from fall hazards such as safety nets, guard rails, and rope access techniques are not included in this standard. This standard does not preclude the use of other appropriate standards to promote fall protection safety.

BSR E1.54, ESTA Standard for Color Communication in Entertainment Lighting. The draft standard is a revision of the existing ANSI E1.54. It specifies a standardized way of specifying color to facilitate the communications between lighting controllers and color-changing luminaires. The method is generic and is neither manufacturer-specific nor color technology-specific. The revisions are needed to make the standard more useful and to update the document's name.

The draft E.54 standard and the notes on it are being distributed together in a ZIP file. The draft standard is intended to become an American National Standard. The notes are simply informative notes, and neither add to nor subtract from the requirements of the standard. Reviewers are asked to look at both documents. We don't want errors or confusing text in either of them.

BSR E1.69, Reporting the Low-End Dimming Performance of Entertainment Luminaires Using LED Sources. The standard shall describe a way of showing the end-user or equipment specifier the low-end dimming performance of LED luminaires, when the luminaire output level is set by a control signal varying over the low-end range from 10% to 0%. Right now there is no way for an equipment specifier to assess the low-end dimming of a luminaire without actually looking at the unit, and then there is no way to tell another person what the specifier saw without using subjective terms. Marketing terms, such as "theatrical quality dimming" or "dims smoothly to black," seem to say something, but have no objective meaning.

Two ESTA TSP standards approved

On June 2 the ANSI Board of Standards Review approved **ANSI E1.4-3-2020, Entertainment Technology-Manually Operated Hoist Rigging Systems**, and **ANSI ES1.19-2020, Safety Requirements for Special Event Structures**. ANSI E1.4-3 is a revision and partitioning of ANSI E1.4-2014. This portion covers hand-cranked winches use for rigging in the entertainment industry. ANSI ES1.19 is a revision of ANSI ES1.19-2018. Both documents will be published in the next few weeks, and will be available for free download at <http://tsp.esta.org/freestandards>, thanks to the sponsorship of ProSight Specialty Insurance.

The 2020 NFPA Technical Meeting is open

The NFPA Board of Directors has suspended the NFPA Technical Meeting Convention Rules and approved Temporary NFPA Technical Meeting Convention Rules for 2020. The 2020 NFPA Technical Meeting is planned to be open on-line from June 8th through June 19th to allow NFPA members *and the public* to express positions on each Certified Amending Motion, as described in the temporary 2020 Rules. Additionally, each relevant technical committee, correlating committee, and authorized maker of a CAM has provided a position statement related to each CAM. The Technical Meeting page (with the links noted below) can be accessed at https://www.nfpa.org/conference/technical_meeting.html.

During the meeting session, NFPA Members and the public are encouraged to participate in a virtual debate about each CAM by submitting position statements (accessed by clicking "Join the Debate"). All submitted position statements will be publicly posted. There is no registration or fee required to participate in the debate. All participants will, however, be prompted to create an NFPA profile before submitting position statements in the debate. To allow for full consideration of views and objections, all participants are encouraged to engage in debate by responding to position statements, acknowledging the name and date stamp of the position statement you are supporting or countering. There is no cost to create a profile and participate in the electronic debate.

Following the debate period, eligible NFPA members who have registered for the electronic 2020 NFPA Technical Meeting will have the opportunity to vote on all CAMs. Registration is planned to be open from June 8th to June 17th for eligible NFPA Members to register to vote. To participate in the voting of CAMs, eligible NFPA Members must register. This year, NFPA has reduced the Technical Meeting registration fee to \$50. To register, simply click "Register". Once registered, you will receive instructions to download the voting application and information on how to vote electronically. Voting is planned to be open from June 22nd to June 26th.

Following the close of the voting period, NFPA will publicly post all results on the Technical Meeting site and at <https://nfpa.org/nitmam> on June 29th. Successful CAMs will be forwarded to the responsible committees for ballot and in accordance with the Regulations Governing the Development of NFPA Standards.

Please refer to the FAQs for more information. If you need additional assistance, please email techsession@nfpa.org.

GDTF is now a DIN SPEC

The General Device Type Format developed by the industry consortium of MA Lighting, Robe, and Vectorworks, will be published in July as DIN SPEC 15800:2020-07, Entertainment Technology - General Device Type Format (GDTF). It will be available for free download from <https://www.beuth.de/en/technical-rule/din-spec-15800/324748671>, but you may pre-order it now.

GDTF is a standard for describing the hierarchical and logical structure and controls of controllable device in the lighting and entertainment industry. GDTF is a foundational tool for the exchange of device data between lighting consoles, as well as CAD and 3D pre-visualization applications.

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.

Due 13 July 2020

BSR/ASA S12.61-202x, Declaration and Verification of Noise Emission Values of Machinery, Equipment, and Products (new standard)

Information on the acoustical noise emitted by machinery, equipment, and products is needed by consumers, manufacturers, building, and land-use planners, governmental authorities, and others concerned about noise in order to make informed purchasing decisions. For this purpose, this standard specifies the noise emission values to be declared for a batch of machines, equipment, or products and the requirements for their presentation; the method for determining the mean A-weighted sound power level; the method for optionally determining the total standard deviation; the method for optionally determining the mean A-weighted emission sound pressure level; and the method for verifying the noise emission values that are declared by manufacturers and other product suppliers.

Single copy price: \$139.00

Order from and send comments to: Nancy Blair-DeLeon, standards@acousticalsociety.org

BSR/ASSP Z359.14-202x, Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems (revision and redesignation of ANSI/ASSE Z359.14-2014)

This standard establishes requirements for the performance, design, qualification testing, markings and instructions, inspections, maintenance and storage, and removal from service of self-retracting devices (SRDs) including self-retracting lanyards (SRLs), self-retracting lanyards with integral rescue capability (SRL-Rs), and self-retracting lanyards, personal (SRL-P's). This standard establishes requirements for SRDs intended for use in personal fall arrest or rescue systems for authorized persons within the capacity range of 130 to 310 pounds (59 to 141kg).

Single copy price: \$110.00

Order from and send comments to: omunteanu@assp.org

BSR C82.15-202X, LED Drivers Robustness (new standard)

This standard describes testing methods used to evaluate LED drivers' robustness (ability to withstand specific stress described) and defines a minimum level of robustness. It includes LED drivers that operate from supply sources up to 600 V and 60 Hz or DC applications.

Single copy price: \$100.00

Order from and send comments to: Michael Erbesfeld, Michael.Erbesfeld@nema.org

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/IES TM-LED Chroma Shift-202x, Approved Method: Projecting Long Term Chromaticity Coordinate Shift of LED Light Engines, Lamps and Luminaires. (new standard)

This document applies to LED light engines, lamps, and luminaires that incorporate white LEDs that utilize phosphor conversion.

Contact: Patricia McGillicuddy, pmcgillicuddy@ies.org

BSR C82.18-202X, Light Emitting Diode Drivers - Performance Characteristics (new standard)

This standard describes the procedures to be followed and the precautions to be taken in measuring performance of LED drivers. The scope includes, but is not limited to, LED drivers with these characteristics: General lighting, exterior lighting, and roadway lighting applications; Input supply voltage up to 600 VDC or 600 VAC (50 or 60 Hz); Output open-circuit voltage of 600 V or less; Constant-current or constant-voltage direct current (DC) output; Fixed, variable (dimnable), pulse-width modulation, or programmable (tunable) output power; and External (standalone) or internal (enclosed in luminaire).

Contact: Michael Erbesfeld, Michael.Erbesfeld@nema.org

BSR C82.16-202X, Light Emitting Diode Drivers - Methods of Measurement (revision of ANSI C82.16-2020)

This standard describes the procedures to be followed and the precautions to be taken in measuring performance of LED drivers. The scope includes, but is not limited to, LED drivers with these characteristics: General lighting, exterior lighting, and roadway lighting applications; Input supply voltage up to 600 VDC or 600 VAC (50 or 60 Hz); Output open-circuit voltage of 600 V or less; Constant-current or constant-voltage direct current (DC) output; Fixed, variable (dimnable), pulse-width modulation, or programmable (tunable) output power; and External (standalone) or internal (enclosed in luminaire).

Contact: Michael Erbesfeld, Michael.Erbesfeld@nema.org

BSR C82.77-10-202X, Lighting Equipment - Harmonic Emission Limits Related Power - Quality Requirements (revision of ANSI C82.77-10-2020)

This standard specifies harmonic limits, their methods of measurement, and power factor (PF) for lighting equipment. This standard covers all types of lighting equipment that is used for general illumination (typically found in residential, commercial, and industrial applications) and which is connected to commonly distributed 60 Hz alternating current (AC) power line systems.

Contact: Michael Erbesfeld, Michael.Erbesfeld@nema.org

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/IES LP-6-2020, Lighting Practice: Lighting Control Systems – Properties, Equipment and Specification (new standard): 28 May 2020

ANSI/IES RP-42-2020, Recommended Practice: Dimming and Control Method Designations (new standard): 29 May 2020

ANSI/IES RP-4-2020, Recommended Practice: Lighting Library Spaces (new standard): 21 May 2020

ANSI/IES TM-15-2020, Approved Method: Luminaire Classification System for Outdoor Luminaires (new standard): 21 May 2020

ANSI/UL 498-2020a, Standard for Safety for Attachment Plugs and Receptacles (revision of ANSI/UL 498-2020): 22 May 2020

ANSI/UL 498D-2020, Standard for Safety for Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts (new standard): 28 May 2020

ANSI/UL 498E-2020, Standard for Safety for Attachment Plugs, Cord Connectors and Receptacles - Enclosure Types for Environmental Protection (new standard): 28 May 2020

ANSI/UL 498F-2020, Standard for Safety for Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts (new standard): 28 May 2020

ANSI/UL 1640-2020, Standard for Safety for Portable Power-Distribution Equipment (revision of ANSI/UL 1640-2016): 29 May 2020

ANSI Z136.5-2020, Standard for Safe Use of Lasers in Educational Institutions (new standard): 19 May 2020

Draft IEC & ISO documents

This section lists proposed documents that the IEC or ISO, or both, are 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. Comments from US citizens on ISO documents should be sent to Karen Hughes at isot@ansi.org. Any prices, if shown, are for purchases through ANSI. The sort order is by due date then alphanumeric.

77B/830/FDIS, IEC 61000-4-3 ED4: Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test, 3 July 2020

81/640/FDIS, IEC 62793 ED2: Protection against lightning - Thunderstorm warning systems, 3 July 2020

JTC1-SC41/163/FDIS, ISO/IEC 30144 ED1: Internet of Things (IoT) - Wireless sensor network system supporting electrical power substation, 24 July 2020

ISO/DIS 22453, Elements recycling - System of information exchange on rare earth elements in industrial waste and end of life cycled products, 7 August 2020, \$46.00

ISO/DIS 24095, Workplace air - Guidance for the measurement of respirable crystalline silica, 13 August 2020, \$112.00

34D/1548/CD, IEC 60598-2-20 ED5: Luminaires - Part 2-20: Particular requirements - Lighting chains, 14 August 2020

76/651/CDV, ISO/IEC 19818-1 ED1: ISO 19818: Eye and face protection - Protection against laser radiation - Requirements and test methods, 14 August 2020

ISO/IEC DIS 15961-1, Information technology - Data protocol for radio frequency identification (RFID) for item management - Part 1: Application interface, 14 August 2020, \$175.00

ISO/DIS 22737, Intelligent transport systems - Low-speed automated driving (LSAD) systems for predefined routes – Performance requirements, system requirements and performance test procedures, 14 August 2020, \$112.00

ISO 11228-2/DAMd1, Ergonomics - Manual handling - Part 2: Pushing and pulling - Amendment 1, 20 August 2020, \$33.00

ISO/DIS 37155-2, Framework for integration and operation of smart community infrastructures - Part 2: Holistic approach and the strategy for development, operation and maintenance of smart community infrastructures, 20 August 2020, \$93.00

62D/1768/NP, PNW 62D-1768: Test methods for walking RACA Robot, 21 August 2020

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/TS 62257-12-1 Ed. 3.0 en:2020, Recommendations for renewable energy and hybrid systems for rural electrification - Part 12-1: Laboratory evaluation of lamps and lighting appliances for off-grid electricity systems, \$352.00

S+ IEC/TS 62257-12-1 Ed. 3.0 en:2020 (Redline version), Recommendations for renewable energy and hybrid systems for rural electrification - Part 12-1: Laboratory evaluation of lamps and lighting appliances for off-grid electricity systems, \$457.00

ISO 21384-4:2020, Unmanned aircraft systems - Part 4: Vocabulary, \$45.00

ISO 31022:2020, Risk management - Guidelines for the management of legal risk, \$162.00

ISO 9241-110:2020, Ergonomics of human-system interaction – Part 110: Interaction principles, \$162.00

ISO/IEC 21823-2:2020, Internet of things (IoT) - Interoperability for IoT systems - Part 2: Transport interoperability, \$103.00

ISO/IEC TR 24028:2020, Information technology - Artificial intelligence - Overview of trustworthiness in artificial intelligence, \$185.00

ISO/IEC TR 24772-3:2020, Programming languages - Guidance to avoiding vulnerabilities in programming languages - Part 3: C, \$185.00

ISO/IEC TR 30164:2020, Internet of things (IoT) - Edge computing, \$185.00

ISO/IEC TR 30166:2020, Internet of things (IoT) - Industrial IoT, \$232.00

TSP meeting schedule

All times are EDT, and all meetings will be via WebEx, not face-to-face.

| | | |
|-----------------------------------|-------------------|------------------------|
| Control Protocols Working Group | 10:00 – 13:00 EDT | Thursday 16 July 2020 |
| Electrical Power Working Group | 14:00 – 17:00 EDT | Friday 17 July 2020 |
| Event Safety Working Group | 10:00 – 13:00 EDT | Friday 17 July 2020 |
| Floors Working Group | 14:00 – 16:00 EDT | Wednesday 15 July 2020 |
| Fog & Smoke Working Group | 17:00 – 20:00 EDT | Wednesday 15 July 2020 |
| Photometrics Working Group | 14:00 – 16:00 EDT | Thursday 16 July 2020 |
| Rigging Working Group | 17:00 – 20:00 EDT | Thursday 16 July 2020 |
| Stage Machinery Working Group | 10:00 – 13:00 EDT | Wednesday 15 July 2020 |
| Stage Machinery E1.6-4 Task Group | 14:00 – 16:00 EDT | Tuesday 14 July 2020 |
| Stage Machinery E1.64 Task Group | 11:00 – 13:00 EDT | Tuesday 14 July 2020 |
| Technical Standards Council | 11:00 – 14:00 EDT | Monday 20 July 2020 |

The meetings in October also will be via WebEx, not face-to-face. They are scheduled for the second week of October. The meeting schedule is posted at <https://www.esta.org/ESTA/meetings.php>. Note that it is subject to change. (Of course, everything is subject to change.)

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 ESTA.

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TSP donors who have made long-term, multi-year pledges

About the Stage
Actors' Equity Association
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B-Hive Industries
Scott Blair
BMI Supply
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City Theatrical
Clark-Reder Engineering
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Electronic Theatre Controls
Entertainment Project Services
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German Light Products

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Stage Rigging

Theatre Projects

Theatre Safety Programs

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About the Stage

B-Hive Industries, Inc.

Scott Blair

Boston Illumination Group

Candela Controls, Inc.

Clark Reder Engineering

Tracey Cosgrove & Mark McKinney

Doug Fleenor Design

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Sapsis Rigging Inc.

Dana Taylor

Steve Terry

Vertigo

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WNP Services

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

Actors' Equity Association

Barbizon Lighting Company

Golden Sea Professional Lighting Provider

IATSE Local 728

IATSE Local 891

Lex

NAMM

Rosco Laboratories

Texas Scenic Company

INVESTOR (\$1,500–\$4,999; 20–100 employees/members)

American Society of Theatre Consultants

BMI Supply

City Theatrical Inc.

H&H Specialties, Inc.

InterAmerica Stage, Inc.

Lycian Stage Lighting

Morpheus Lights

Niscon Inc.

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

Bruce Darden

Guangzhou Color Imagination LED Lighting

Kenney Drapery Associates, Inc.

Indianapolis Stage Sales & Rentals, Inc.

L1 Inc.

Lighting Infusion LLC

Scott Madaski

Mediam Sp. zo.o.

Nanyi Audio & Lighting Enterprise Co., Ltd.

Qdot Lighting Ltd.

Show Light Oy

SUPPORTER (\$50 - \$2,999; >100 employees/members)

Harlequin Floors

SUPPORTER (\$50 - \$1,499; 20–100 employees/members)

ACT Lighting Inc./AC Power Distribution
ARM Automation, Inc.
Ian Foulds, IATSE Local 873
General Lighting Electronic Co. Ltd.
Guangzhou YaFeng Optoelectronic Equipment Co.
Guangzhou Yilaiming Photoelectric Technology Co.,
Ltd.
HAYA Light Equipment Ltd. Co.
High Output
InCord
Intella Systems Co., Ltd.
iWeiss
LA ProPoint, Inc.
Moss LED Inc.

Movecat GmbH
Nanshi Lighting
Oasis Stage Werks
Shenzhen Ifountain Technology
Skjonberg Controls Inc.
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Stagemaker
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Syracuse Scenery and Stage Lighting Co., Inc.
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Ultratec Special Effects
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SUPPORTER (\$50 - \$199; <20 employees/members)

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Beverly and Tom Inglesby
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Michael Skinner
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Stephen Vanciel
Arjan van Vught

Extraordinary legacy gift: Ken Vannice