



ESTA Standards Watch

Late December 2019 Volume 23, Number 24

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Introduction to Modern Atmospheric Effects, 6th edition, published

The Introduction to Modern Atmospheric Effects, 6th edition, was approved for publication on December 10 and is now available for download at no cost from tsp.esta.org/freestandards, thanks to the sponsorship of ProSight Specialty Insurance. This latest edition of the popular handbook on theatrical fogs gives the entertainment industry a factual presentation on all types of popular atmospheric fog effects. The section on using fog offers tips on putting fog where it will do the most good, lighting it effectively, working with fire alarms, and limiting exposure. This edition includes more detailed information on controlling exposure, including the use of meters. The bibliography also has been updated.

Eight ESTA standards available for public review

Eight ESTA standards and draft standards are available for public review on the ESTA TSP website at <http://estalink.us/pr>. Anyone materially affected by any document is invited to review it and to offer comments before the deadline. The review documents are available for free; downloading it costs you nothing but your time. The listing below is an alphanumeric sort.

ANSI E1.17 - 2015, Entertainment Technology -- Architecture for Control Networks (ACN), is being considered for reaffirmation—no substantive changes. It is a suite of documents that specifies an architecture, including protocols and language, which may be configured and combined with other standard protocols to form flexible, networked audio, lighting, or other control systems. The suite of documents is offered in a ZIP file for download. Comments are due no later than 30 December 2019.

ANSI E1.19 - 2015, Recommended Practice for the Use of Class A Ground-Fault Circuit Interrupters (GFCIs) Intended for Personnel Protection in the Entertainment Industry, is being considered for reaffirmation with no substantive changes. It offers guidance, in accordance with existing applicable standards, on how to select, install, use and maintain ground fault protection devices with nominal 5 mA trip settings in the entertainment industry. The purpose of their use would be to protect persons from shock and persons and property from fire. Comments are due no later than 30 December 2019.

BSR E1.4-3, Entertainment Technology -- Manually Operated Hoist Rigging Systems, applies to permanently installed, manually operated hoists used as part of rigging systems for raising, lowering, and suspension of scenery, properties, lighting, and similar loads. This standard establishes requirements for the design, manufacture, installation, inspection, and maintenance of manually operated hoist systems for lifting and suspension of loads for performance, presentation, and theatrical production. Comments are due no later than 30 December 2019. Comments are due no later than 30 December 2019.

BSR E1.20, Entertainment Technology -- Remote Device Management over USITT DMX512 Networks, is a revision of ANSI E1.20 – 2010. The standard is being revised to clarify ambiguities, fix bugs, and incorporate some additional features. E1.20 is an extension to USITT DMX512 and ANSI E1.11 that allows for bi-directional communication on the primary data link. This allows a controller to discover RDM-enabled devices on the link, to set starting addresses and other configuration settings, and to request status messages. Comments are due no later than 30 December 2019.

BSR E1.21, Entertainment Technology -- Temporary Structures Used for Technical Production of Outdoor Entertainment Events, establishes a minimum level of design and performance parameters for the design, manufacturing, use and maintenance of temporary ground-supported structures used in the production of outdoor entertainment events. The purpose of this guidance is to ensure the structural reliability and safety of these structures and does not address fire safety and safe egress issues. This standard also establishes a reasonable standard for care by providing the minimum acceptable requirements at which temporary structures shall be designed and used. Comments are due no later than 30 December 2019.

BSR E1.37-5, General Purpose Messages for ANSI E1.20, RDM, provides additional Get/Set parameter messages (PIDs) for use with the ANSI E1.20 Remote Device Management protocol. Comments are due no later than 30 December 2019.

BSR E1.47, Entertainment Technology -- Recommended Guidelines for Entertainment Rigging System Inspections, covers the inspection of entertainment rigging systems. Rigging systems may be statically suspended (stationary) (dead hung) equipment, manually operated counterweight sets, manually operated hoist sets, rope and sandbag (hemp) sets, and electric hoist sets (including winding drum hoists, packaged hoists, powered counterweight sets). The document includes inspection of fire safety curtain systems, rigging only. Rigging systems frequently include combinations and variations of rigging types. Comments are due no later than 30 December 2019.

BSR ES1.9, Event Safety -- Crowd Management, defines "crowd management," as distinguished from "crowd control," provides an overview of crowd management theory and vocabulary, and applies these terms to certain reasonably foreseeable risks that arise during live events. The standard is intended both to identify minimum requirements and to provide questions and suggestions that help event organizers make reasonable choices under the circumstances of their event. Comments are due no later than 30 December 2019.

Student event: a simulation exercise in standardization

Undergraduate and graduate students from all disciplines are invited by ANSI to join an educational event, *Setting Standards: A Simulation Exercise in Strategy and Cooperation in Standardization Processes*, hosted by the American National Standards Institute in partnership with the National Institute of Standards and Technology (NIST), Indiana University – Purdue University Indianapolis (IUPUI), and Purdue University, on Friday, 21 February 2020.

The full day event at the IUPUI campus in Indianapolis will expose students to the challenges and opportunities in the standards setting environment. Students will explore the analytical and practical skills needed to engage successfully in standards negotiations. Under the guidance of an expert facilitator, students will negotiate a standard for a fictional next generation technology and simulate a real standardization process through role-playing. Later, participants will evaluate and reflect on their experiences, focusing on lessons for real-life standards setting activities. Student participants do not need any prior knowledge of any particular technology. Information will be provided to participants at the start of the exercise to help engagement.

There is no cost to attend the event. Please contact Lisa Rajchel at ANSI (lrajchel@ansi.org) as soon as possible to reserve a seat for one or more students.

New Jersey building permits for stage scenery

If you are building stage scenery in New Jersey—even for an amateur production—it is likely that you will need a building permit. Standards@esta.org recently received an email from a high school stagecraft instructor who had been cited by the local building inspector for building the scenery for a show without first obtaining a permit. The instructor had to take down most of the scenery to avoid the show being shut down.

New Jersey seems to be an outlier in this requirement. The 2018 International Building Code in clause 105.2 lists construction projects that can be done without a building permit. Number 8 in that list includes “Temporary motion picture, television and theater stage sets and scenery.” New Jersey adopted the 2018 International Building Code, but with New Jersey amendments, which replace the IBC Chapter 1 with New Jersey Administrative Code 5:23. The NJAC 5:23 does not appear to have a permit exemption for stage sets and scenery. There is an exemption in NJAC 5:23-2.14, (b) 4. i. that exempts “the erection, operation or maintenance of any temporary structures (excluding tents, tensioned membrane structures, canopies, and greenhouses) covering an area less than 120 square feet, including all connecting areas or spaces with a common means of egress or entrance and which remain in place for less than 180 days.” One-hundred twenty square feet is pretty small. Four 4 x 8' platforms would be larger than that, so it's not an effective exemption for much stage scenery.

There is a provision in 5:23-2.14 (c) for an annual construction permit, which may obviate the need to file for a building permit for each show in a season. An annual construction permit can be granted “by the construction official to educational, industrial, institutional, mercantile, business and government facilities” based upon submission of eight documents in duplicate detailing who is to do the work, their training in construction codes, qualifications of the supervisor, daily logs of the work done, and so on. That annual permit might cover a school with a stagecraft program, or an “institutional” or “business” facility. The eight documents are not an impossible list of requirements, but can be a surprise to a stagecraft instructor or a technical director who thought that stage sets were exempt from needing construction permits. They are not exempt in New Jersey, if they exceed 120 square feet in area.

Any person or organization building temporary motion picture, television and theater stage sets and scenery in New Jersey would do well to contact the local building code officials about permit requirements. Do it early in the production planning process to avoid an unpleasant surprise near opening night.

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 TBTs that may be of interest to Standards Watch readers. If you have a problem with any TBT, 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.

Kenya Notification KEN/933

Date issued: 12 December 2019

Agency responsible: Kenya Bureau of Standards, Standards Information Resource Centre (KEBS)

National inquiry point: Kenya Bureau of Standards, Standards Information Resource Centre (KEBS)

Products covered: All goods imported into Kenya

Title: Legal Notice no. 183, The Standards (Verification of Conformity to Standards and other Applicable Regulations of Imports) Regulations, 2019 (4 page(s), in English)

Description of content: All goods which are subject to this order shall be subjected to verification of conformity to Kenya standards or approved specifications and other applicable regulations in the country of exportation or in a transshipment port by the inspection body or bodies appointed under paragraph 4 and may be re-inspected by Kenya Bureau of Standards at the Port of Entry if it is considered necessary.

This Legal Notice revoke the Verification of Conformity to Kenya Standards of Imports Order, 2018

Objective and rationale: Quality requirements

Proposed date of adoption: Not given by country

Proposed date of entry into force: 16 December 2019 [It's done.]

Final date for comments: Not given by country

Full text: [https://tsapps.nist.gov/notifyus/docs/wto_country/KEN/full_text/pdf/KEN933\(english\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/KEN/full_text/pdf/KEN933(english).pdf)

Kenya Notification KEN/932

Date issued: 12 December 2019

Agency responsible: Kenya Bureau of Standards, Standards Information Resource Centre (KEBS)

National inquiry point: Kenya Bureau of Standards, Standards Information Resource Centre (KEBS)

Products covered: Standardization, General rules

Title: KS 01-1:2019 A Standard for Standards Part 1: The development of Kenya Standards - Specification (28 page(s), in English)

Description of content: This Draft Kenya Standard describes the principles of preparation of the national standards. It also outlines the application of Kenya standards in technical regulations. This standard is intended to serve as a guide for technical committee members, regulators, and as background information for standards development organizations, members of the public and other stakeholders.

Objective and rationale: Quality requirements

Relevant documents:

- SANS 1-1:2012, Edition 3, Standard for standards Part 1: The development of South African national standards
- BS 0:2016, Edition 2, British standard — A standard for standards — Principles of standardization.
- Participating in International Standardization, ISO Publication, of September 2007, ISBN 978-92-6710453-9.
- Using and referencing ISO and IEC standards for technical regulations ISO/IEC Publication of September 2007, ISBN 978-92-67-10454-6.

Proposed date of adoption: 1 March 2020

Proposed date of entry into force: Not given by country

Final date for comments: 6 February 2020

Full text of "A Standard for Standards":

[https://tsapps.nist.gov/notifyus/docs/wto_country/KEN/full_text/pdf/KEN932\(english\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/KEN/full_text/pdf/KEN932(english).pdf)

Taiwan Economy Notification TPKM/395

Date issued: 11 December 2019

Agency responsible: Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs (BSMI)

National inquiry point: Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs (BSMI)

Products covered: - Static converters (HS 850440); - Audio-frequency electric amplifiers (HS 851840); Video recording or reproducing apparatus, whether or not incorporating a video tuner (HS 8521); Radar apparatus, radio navigational aid apparatus and radio remote control apparatus (HS 8526); Reception apparatus for television, whether or not incorporating radio- Broadcast receivers or sound or video recording or reproducing apparatus; video monitors and video projectors (HS 8528)

Title: Proposal for Amendment to Legal Inspection Requirements for Static Converters, Power Supplies and Other Products (5 pages in English; 5 pages in Chinese)

Description of content: The Bureau of Standards, Metrology and Inspection (BSMI) proposes to make the following major revisions to streamline the inspection requirements:

1. To revise the inspection scope for static converters and power supplies by removing those designed for HI-END audio. In addition, instead of requiring compliance with both CNS 14336-1 and CNS 14408 in terms of their safety, compliance with either one will be sufficient; and
2. To adjust the modules applicable to audio-video products under the Registration of Product Certification Scheme.

Objective and rationale: Protection of human health or safety

Relevant documents: Commodity Inspection Act, CNS 14336-1, CNS 14408

Proposed date of adoption: Not given by country

Proposed date of entry into force: Not given by country

Final date for comments: 9 February 2020

[https://tsapps.nist.gov/notifyus/docs/wto_country/TPKM/full_text/pdf/TPKM395\(english\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/TPKM/full_text/pdf/TPKM395(english).pdf) and

[https://tsapps.nist.gov/notifyus/docs/wto_country/TPKM/full_text/pdf/TPKM395\(traditional_chinese\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/TPKM/full_text/pdf/TPKM395(traditional_chinese).pdf)

Proposed revision to ANSI Essential Requirements available for comment

ANSI has announced a proposed procedural revisions to the *ANSI Essential Requirements*. The revision is the result of the ExSC's consideration over several years of multiple proposed revisions and comments submitted by consumer representatives, ANSI March 2018 ANS Workshop participants and other stakeholders. The proposed revision reflects modified text as shown in sections 1.5 Notification of standards development, 2.1 Openness, 2.3 Balance, 2.5 Notification of standards development and coordination and 2.8 Appeals. The proposed revision is intended to clarify existing requirements and process implementation expectations, and establish new procedural requirements.

Access at https://tsp.esta.org/tsp/StandardsWatch/ExSC_017_2019_.pdf.

Submit comments to psa@ansi.org before 17 January 2020.

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 27 January 2020

BSR/OPEI Z130.1-202x, Golf Cars - Safety and Performance Specifications (revision and redesignation of ANSI/ILTVA Z130.1-2012)

This standard provides safety and performance specifications relating to golf cars, driven by electric motors or internal combustion engines specifically intended for and used on golf courses for transporting golfers and their equipment.

Single copy price: Free

Order from and send comments to: Greg Knott, gknott@opei.org

BSR/OPEI Z135-202x, Personal Transport Vehicles - Safety and Performance Specifications (revision of ANSI/ILTVA Z135-2012)

This standard provides safety and performance specifications relating to personal transport vehicles, (PTVs), driven by electric motors or internal combustion engines to be operated on designated roadways, or within a closed community where permitted by law or by regulatory authority rules.

Single copy price: Free

Order from and send comments to: Greg Knott, gknott@opei.org

BSR/UL 4600-202x, Standard for Safety for the Evaluation of Autonomous Products (new standard)

This standard covers the safety principles, risk mitigation, tools, techniques, and lifecycle processes for building and evaluating a safety argument for vehicles that can operate in an autonomous mode. Operation is assumed to occur autonomously without human supervision and without expectation of human intervention in performing the dynamic driving task and other normal system operations based upon the current item state and ability to sense and otherwise interpret the operating environment. Human contributions to safety in other than normal

operation are considered (e.g., maintenance), as are interactions with humans who are not operating the item (e.g., pedestrians). The requirements of this standard are considered a minimum appropriate level of completeness and rigor necessary to create an acceptably well-formed and complete item safety case.

Single copy price: Free

Access document and offer comments at: <https://csds.ul.com/Home/ProposalsDefault.aspx>

BSR/UL 1574-202x, Standard for Safety for Track Lighting Systems (revision of ANSI/UL 1574-2012 (R2016))

This proposal for UL 1574 covers: (1) Revisions to include requirements for Low-Voltage Track Systems.

Single copy price: Free

Access document and offer comments at: <https://csds.ul.com/Home/ProposalsDefault.aspx>

Notice of Withdrawn ANS by an ANSI-Accredited Standards Developer

In accordance with clause 4.2.1.3.2 Withdrawal by ANSI-Accredited Standards Developer of the ANSI Essential Requirements, **ANSI/ASTM E1836/E1836M-2009 (R2016), Practice for Building Floor Area Measurements for Facility Management**, has been withdrawn as an ANS. Questions may be directed to: Corice Leonard, accreditation@astm.org.

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 6 January 2020

CSA IEC 31010:19, Risk management – Risk assessment techniques (new edition)

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.

Due 20 January 2020

CSA ISO 9004, Quality management — Quality of an organization — Guidance to achieve sustained success (new edition)

Adoption of ISO 9004:2018 in Canada. ISO 9004:2018 gives guidelines for enhancing an organization's ability to achieve sustained success. This guidance is consistent with the quality management principles given in ISO 9000:2015. ISO 9004:2018 provides a self-assessment tool to review the extent to which the organization has adopted the concepts in this document. ISO 9004:2018 is applicable to any organization, regardless of its size, type, and activity.

CSA ISO 10001, Quality management -- Customer satisfaction -- Guidelines for codes of conduct for organizations (new edition)

This document gives guidelines for planning, designing, developing, implementing, maintaining and improving customer satisfaction codes of conduct. This document is applicable to product- and service-related codes containing promises made to customers by an organization concerning its behaviour. Such promises and related provisions are aimed at enhanced customer satisfaction.

CSA ISO 10002 - Quality management -- Customer satisfaction -- Guidelines for complaints handling in organizations (new edition)

This document gives guidelines for the process of complaints handling related to products and services within an organization, including planning, design, development, operation, maintenance and improvement. The complaints-handling process described is suitable for use as one of the processes of an overall quality management system.

CSA ISO 10003, Quality management -- Customer satisfaction -- Guidelines for dispute resolution external to organizations (new edition)

This document gives guidelines for an organization to plan, design, develop, operate, maintain and improve an effective and efficient dispute-resolution process for complaints that have not been resolved by the organization.

CSA ISO 10005, Quality management -- Guidelines for quality plans (new edition)

This document gives guidelines for establishing, reviewing, accepting, applying and revising quality plans. This document is applicable to quality plans for any intended output, whether a process, product, service, project or contract, and any type or size of organization. It is applicable whether or not the organization has a management system in conformity with ISO 9001. This document provides guidance and does not specify requirements. It is focused primarily on the provision of outputs and is not a guide to the planning of quality management system development.

CSA ISO 10015, Quality management -- Guidelines for competence management and people development (new edition)

This document sets out guidelines intended to help an organization to establish, implement, maintain, and improve systems for managing competence and people development that affect the conformity of products and services supplied by an organization and consider the needs and expectations of relevant interested parties. This document applies to all organizations regardless of their type or size. It is not intended for use in contracts, regulations, or for certification. It does not add to, change, or otherwise modify requirements for the ISO 9000-series or other management system standards

Due 3 February 2020

IEC 62443-4-1, Security for industrial automation and control systems - Part 4-1: Secure product development life cycle requirements (new standard)

The proposal is to adopt IEC 62443-4-1 without modification. That part of IEC 62443 specifies process requirements for the secure development of products used in industrial automation and control systems. It defines a secure development life-cycle for developing and maintaining secure products. The requirements can be applied to new or existing process for developing, maintaining, and retiring hardware, software, or firmware for new or existing products. (The public review document is a copy of IEC 62443-4-1, secured against everything except reading.)

IEC 62443-2-4A, Amendment 1 - Security for industrial automation and control systems - Part 2-4: Security program requirements for IACS service providers (amendment)

The proposal is to adopt IEC 62443-2-4 Amendment 1. The document lists 20 pages of changes to IEC 62443-2-4. Some changes change a word; some substitute entire paragraphs.

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/AWI 0641-2019, Architectural Wood Casework (new standard): 9 December 2019

ANSI/AWS D1.1/D1.1M-2019, Structural Welding Code - Steel (revision of ANSI/AWS D1.1/D1.1M-2015): 9 December 2019

ANSI/CTA 2087-2019, Recommendations and Best Practices for Connection and Use of Accessories for XR Technologies (new standard): 9 December 2019

ANSI/FM 4996-2019, Classification of Pallets and Other Material Handling Products as Equivalent to Wood Pallets (revision of ANSI/FM 4996-2013): 9 December 2019

ANSI C18.2M, Part 1-2019, Standard for Portable Nickel Rechargeable Cells and Batteries General and Specifications (new standard): 5 December 2019

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. 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.

JTC1-SC41/123/CD, ISO/IEC 21823-3 ED1: Internet of Things (IoT)-Interoperability for IoT Systems - Part 3: Semantic interoperability, 31 January 2020

JTC1-SC41/126/CD, ISO/IEC 30162 ED1: Internet of Things (IoT) -Compatibility requirements and model for devices within industrial IoT systems, 31 January 2020

JTC1-SC41/127/CD, ISO/IEC 30163 ED1: Internet of Things (IoT) -System requirements of IoT/SN technology-based integrated platform for chattel asset monitoring supporting financial services, 31 January 2020

ISO/DIS 10303-1, Industrial automation systems and integration -Product data representation and exchange - Part 1: Overview and fundamental principles, 13 February 2020, \$88.00

ISO/DIS 22955, Acoustics - Acoustic quality of open office spaces, 23 February 2020, \$107.00

2/1977/CD, IEC 60034-1 ED14: Rotating electrical machines - Part 1: Rating and performance, 28 February 2020

22G/409/CD, IEC 61800-3 ED4: Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods for PDS and machine tools with embedded PDS, 28 February 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](https://www.ansi.org/webstore).

ISO 15392:2019, Sustainability in buildings and civil engineering works - General principles, \$138.00

ISO 21246:2019, Information and documentation - Key indicators for museums, \$209.00

ISO 37123:2019, Sustainable cities and communities – Indicators for resilient cities, \$232.00

ISO/TS 9241-126:2019, Ergonomics of human-system interaction -Part 126: Guidance on the presentation of auditory information, \$138.00

ISO/TS 37107:2019, Sustainable cities and communities – Maturity model for smart sustainable communities, \$185.00

TSP January 2020 meeting schedule

The following meetings will be at the Wyndham Garden Anaheim in conjunction with the 2020 NAMM Show.

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
Electrical Power E1.65 Inspection TG	20:00 – 23:00	Thursday 16 January 2020
Event Safety Fire Safety TG	09:00 – 13:00	Saturday 18 January 2020
Event Safety Rigging Task Group	09:00 – 13:00	Friday 17 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

The April schedule for meetings to be held at the USITT Conference and Stage Expo in Houston, TX is available at <https://esta.org/ESTA/meetings.php>.

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.

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

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BMI Supply	Mike Wood Consulting
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Candela Controls	NAMM
Chauvet	Niscon
City Theatrical	Oasis Stage Werks
Clark-Reder Engineering	Reed Rigging
Columbus McKinnon Corporation	Reliable Design Services
Tracey Cosgrove and Mark McKinney	Robe
Bruce Darden	Rosco Laboratories
Doug Fleenor Design	Rose Brand
Earl Girls Inc. EGI Pro	Alan M. Rowe
Electronic Theatre Controls	David Saltiel
Entertainment Project Services	Sapsis Rigging
Geiger Engineers, PC	Stage Equipment & Lighting
Tony Giovannetti	Stage Rigging
GLP German Light Products	Stagemaker
Golden Sea Professional Equipment Limited	Stageworks
H & H Specialties	Syracuse Scenery and Stage Lighting, Co.
Harlequin Floors	Dana Taylor
High Output	Steve Terry
Neil Huff	Texas Scenic Company
Hughston Engineering	Theatre Projects Consultants
IATSE Local 891	Theatre Safety Programs
InCord	TMB
Beverly and Tom Inglesby	Tyler Truss Systems
Interactive Technologies	Vertigo
InterAmerica Stage	Vincent Lighting Systems
iWeiss Inc.	Steve Walker & Associates
J.R. Clancy	Walt Disney Parks and Resorts
Jules Lauve	Westview Productions
Brian Lawlor	WNP Services, Inc.

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PLASA

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Chauvet Professional

Cisco

Columbus McKinnon Entertainment Technology

Robe

Walt Disney Parks and Resorts

VISIONARY (\$5,000 & up; 20–100 employees/members)

Altman Lighting, Inc.

German Light Products

JR Clancy

McLaren Engineering Group

Rose Brand

Stage Rigging

Theatre Projects

TMB

Tyler Truss Systems, Inc.

VISIONARY (\$500 & up; <20 employees/members)

About the Stage

B-Hive Industries, Inc.

Scott Blair

Boston Illumination Group

Louis Bradfield

Candela Controls, Inc.

Clark Reder Engineering

Tracey Cosgrove & Mark McKinney

Cyclops Lighting

Doug Fleenor Design

EGI Event Production Services

Entertainment Project Services

Neil Huff

Hughston Engineering Inc.

Interactive Technologies

Jules Lauve

Brian Lawlor

Michael Lay

Limelight Productions, Inc.

Link

John T. McGraw

Mike Garl Consulting

Mike Wood Consulting

Reed Rigging

Reliable Design Services

Alan Rowe

Sapsis Rigging Inc.

Stageworks

Dana Taylor

Steve Terry

Theatre Safety Programs

Vertigo

Steve A. Walker & Associates

Westview Productions

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

Area Four Industries

BMI Supply

City Theatrical Inc.

H&H Specialties, Inc.

InterAmerica Stage, Inc.

Lycian Stage Lighting

Morpheus Lights

Niscon Inc.

Tomcat

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

Bruce Darden

Guangzhou Color Imagination LED Lighting

Indianapolis Stage Sales & Rentals, Inc.

Lighting Infusion LLC

Nanyi Audio & Lighting Enterprise Co., Ltd.

Qdot Lighting Ltd.

Robert Scales

Stephen Vanciel

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

Ian Foulds, IATSE Local 873
IATSE Local 51

Harlequin Floors
Thern Stage Equipment

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

ACT Lighting Inc./AC Power Distribution
ARM Automation, Inc.
Blizzard Lighting, LLC
Geiger Engineers
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.
Nanshi Lighting
Oasis Stage Werks
Shenzhen Ifountain Technology
Stage Equipment & Lighting
Stagemaker
Syracuse Scenery and Stage Lighting Co., Inc.
Taurus Light Co. Ltd.
Ultratec Special Effects
Vincent Lighting Systems
Zhuhai Shengchang Electronics Co.

SUPPORTER (\$50 - \$199; <20 employees/members)

Roy Bickel
Capture Visualisation AB
DMX Pro Sales
Tony Giovannetti
Pat Grenfell
Mitch Hefter
John Huntington
Beverly and Tom Inglesby
Eddie Kramer
Jason Kyle

LuxBalance Lighting
Tyrone Mellon, Jr.
Orange Pi DMX
Lizz Pittsley
Showman Systems
Michael Skinner
Skjonberg Controls Inc.
Arjan van Vught
Charlie Weiner

Extraordinary legacy gift: Ken Vannice