ANSI STANDARDS ACTION

PUBLISHED WEEKLY BY THE AMERICAN NATIONAL STANDARDS INSTITUTE 25 West 43rd Street, NY, NY 10036

VOL. 50, #19 *May 10, 2019*

Contents

American National Standards

Call for comment on proposals listed

This section solicits public comments on proposed draft new American National Standards, including the national adoption of ISO and IEC standards as American National Standards, and on proposals to revise, reaffirm or withdraw approval of existing American National Standards. A draft standard is listed in this section under the ANSI-accredited standards developer (ASD) that sponsors it and from whom a copy may be obtained. Comments in connection with a draft American National Standard must be submitted in writing to the ASD no later than the last day of the comment period specified herein. Such comments shall be specific to the section(s) of the standard under review and include sufficient detail so as to enable the reader to understand the commenter's position, concerns and suggested alternative language, if appropriate. Please note that the ANSI Executive Standards Council (ExSC) has determined that an ASD has the right to require that interested parties submit public review comments electronically, in accordance with the developer's procedures.

Ordering Instructions for "Call-for-Comment" Listings

1. **Order from the organization indicated for the specific proposal.**
2. **Use the full identification in your order, including the BSR prefix; for example, Electric Fuses BSR/SAE J554.**
3. **Include remittance with all orders.**
4. **BSR proposals will not be available after the deadline of call for comment.**

Comments should be addressed to the organization indicated, with a copy to the Board of Standards Review, American National Standards Institute, 25 West 43rd Street, New York, NY 10036. Fax: 212-840-2298; e-mail: psa@ansi.org

* Standard for consumer products

ISSN 0038-9633

Comment Deadline: June 9, 2019

ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.)

Addenda

BSR/ASHRAE/IES Addendum be to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

In reviewing the final draft for publication, it was noted that the rating conditions for the return air were listed as dry bulb and wet bulb which is the typical method used for this, but the AHRI 1360 rating standard and the current ASHRAE 90.1 table 6.8.1-11 uses dry bulb and dew point. This ISC is being released to cover the change from wet bulb to dew point in tables 6.8.1-11 and 6.8.1-19 in both the IP and SI versions.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum bo to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

For the third public review, changes are being made to correct references to products in table F-4 to align exactly with the DOE requirements.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum bp to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

For the third public review, ISC the following changes have been made:

- Add back footnotes f and g and renumber the footnotes that follow. Footnotes f and g were incorrectly deleted as part of the 2nd public review ISC;

- In the SI version of table F-5, footnotes c and d have been revised to have the correct reference to the appropriate requirement in alignment with the IP table F-5;

- In Table 6.8.1-6 (both IP and SI versions), test procedure references made to the CFR should not include “Part”. For example, the Test Procedure reference for Oil fired hot water boilers >300,000 Btu/h should be “10 CFR 431.86” instead of “10 CFR Part 431.86” so this change has been included in the third public review ISC.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum br to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

New DOE refrigeration minimum efficiency requirements went into effect on March 27, 2017 and this addendum updates the requirements in table 6.8.1-12 and 6.8.1-13 to align with the DOE requirements. There were also some nomenclature and other changes, which have also been updated in this addendum.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum by to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

In response to comments from the first public review of addendum BY, two additional exceptions are being added to (a) exempt smaller buildings and additions from this requirement, and (b) clarify that alterations (e.g., roof equipment, lighting, or other replacement or upgrades) do not trigger this requirement.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cb to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IES Addendum cb to ANSI/ASHRAE/IES Standard 90.1-201x)

This addendum revises the Title Purpose and Scope (TPS) of Standard 90.1 to apply to areas outside of the physical building. The addendum introduces a new term “site” to define those types of environments where a physical building may not be present but the energy consuming lighting and equipment are covered by provisions in the Standard. Also, a new provision is included in Chapter 4 “Administration and Enforcement” to address sites with or without buildings.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cd to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This addenda is intended to be primarily a clarification of the original intention for bypass and control to permit economizer operation.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cf to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

The Department of Energy commented that, for products in US applications, manufacturers must obtain a waiver from the department to be allowed to sell Walk-in Coolers and Walk-in Freezers that employ vacuum-insulated glazing. They asked that this information be included in the standard. This information has been included as an informative note. This is the only change in the scope of this public review.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum ck to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This proposed ISC to addendum ck addresses several public review comments. Language was added to clarify that renewable energy systems included in the Proposed Design must be modeled identically in the Baseline model except for the capacity. Performance criteria to be used when estimating on-site renewable energy when none exists in the Proposed Design have also been changed. Panel efficiency was increased to 19.1% and total system losses reduced to 11.3% based on a report published by NREL in November 2018, entitled "U.S. Solar Photovoltaic System Cost Benchmark: Q1 2018".

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cl to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This addendum corrects the reference that allows VAV budget systems to be modeled with constant volume zones due to minimum air change requirements (such as when required by a healthcare code) and aligns the minimum airflow requirements for VAV boxes in Section 11 with the requirements in Section 6.5.2.1.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cp to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This ISC addresses comments to the 1stPRD asking that PCIt remain independent of any renewable energy included in the Proposed Design that is not required prescriptively. The ISC also makes a change to the definition of PBPPRE so that the method used to determine the prescriptive on-site renewable allowance is the same as in Section 11. These changes will allow Appendix G to continue to be used by other standards and guidelines such as ASHRAE Standard 189.1 that would have been negatively impacted by the original proposal.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cq to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

Federal regulations for ceiling fan testing have been in effect since January 23, 2017. 10 CFR Appendix U to Subpart B of Part 430, Uniform Test Method for Measuring the Energy Consumption of Ceiling Fans provides test procedures for determining the airflow and power consumption of ceiling fans. The purpose of this addendum is to ensure that the maximum fan power input is properly reported for installations both inside and outside the United States. This is addendum is similar to the current requirements for elevators in Standard 90.1 and is intended to set the stage for the future addition of ceiling fan efficiency requirements.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cr to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

The proposed addendum introduces a building envelope backstop, striving to preserve design flexibility and minimize documentation effort while improving the long-term building performance. Projects can comply with the proposed envelope backstop by either meeting the prescriptive envelope requirements in Section 5.5 or using Section 5.6 “Building Envelope Trade-Off Option” to demonstrate that the energy cost penalty from the proposed below-code envelope does not exceed the set margins.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum ct to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This Addendum updates the revision date for ATC-105 from 2000 to 2019.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cu to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This addendum will delete Table 6.8.1-8 as well as the reference to the table in Section 6.4.1.1h, while renumbering these sections appropriately. However, the test procedure requirement for heat exchanger rating will be retained as there continues to be significant benefit to the Industry from ratings that are in compliance with AHRI 400. Therefore, this addendum will add 6.4.7 to require that liquid-to-liquid heat exchangers that fall under the scope of AHRI 400 be rated in accordance with AHRI 400.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cv to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This proposal updates the lighting control requirements for parking garages in Section 9.4.1.2.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cw to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This proposal changes the daylight responsive requirements from continuous dimming or stepped control to continuous dimming required for all spaces. The proposal also adds a definition for continuous dimming that is very similar to the NEMA LSD-64 2014 definition.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

BSR/ASHRAE/IES Addendum cy to BSR/ASHRAE/IES Standard 90.1-201x, Energy Standard for Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/IESNA Standard 90.1-2016)

This proposal is a simple cleanup of an error in an exception to the sidelighting requirements that inadvertently set an exact measurement for an obstruction and it clarifies that the setback distance is a horizontal measurement. The exception is further amended to include natural objects as an obstruction.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Online Comment Database at http://www.ashrae.org/standards-research--technology/public-review-drafts

NSF (NSF International)

Revision

BSR/NSF/CAN 60-201x (i83r1), Drinking Water Treatment Chemicals - Health Effects (revision and redesignation of ANSI/NSF 60 -2018)

This Standard establishes minimum health effects requirements for the chemicals, the chemical contaminants, and the impurities that are directly added to drinking water from drinking water treatment chemicals. This Standard does not establish performance or taste and odor requirements for drinking water treatment chemicals.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: mleslie@nsf.org

BSR/NSF/CAN 61-201x (i146r1), Drinking Water System Components - Health Effects (revision and redesignation of ANSI/NSF 61 -2018)

This Standard establishes minimum health effects requirements for the chemical contaminants and impurities that are indirectly imparted to drinking water from products, components, and materials used in drinking water systems. This Standard does not establish performance, taste and odor, or microbial growth support requirements for drinking water system products, components, or materials.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: mleslie@nsf.org

UL (Underwriters Laboratories, Inc.)

Revision

BSR/UL 1310-201x, Standard for Safety for Class 2 Power Units (revision of ANSI/UL 1310-2014)

This recirculation proposal provides revisions to the UL 1310 proposal dated 11-23-18 and the recirculation proposal dated 2-8-19.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Jonette Herman, (919) 549-1479, Jonette.A.Herman@ul.com

Comment Deadline: June 24, 2019

AAMI (Association for the Advancement of Medical Instrumentation)

New National Adoption

BSR/AAMI/ISO 11737-2-201x, Sterilization of medical devices - Microbiological methods - Part 2: Tests of sterility performed in the definition, validation and maintenance of a sterilization process (identical national adoption of ISO 11737-2 (in development) and revision of ANSI/AAMI/ISO 11737-2-2009 (R2014))

Specifies the general criteria for tests of sterility on medical devices that have been exposed to a treatment with the sterilizing agent which has been reduced relative to that anticipated to be used in routine sterilization processing. These tests are intended to be performed when defining, validating, or maintaining a sterilization process.

Single copy price: Free

Obtain an electronic copy from: lwaggoner@aami.org

Send comments (with copy to psa@ansi.org) to: Lee Waggoner, (703) 647-2786, lwaggoner@aami.org

AGMA (American Gear Manufacturers Association)

New Standard

BSR/AGMA 1107-AXX-201x, Tolerance Specification for Form Milling Cutters (new standard)

This standard provides specifications for nomenclature, dimensions, tolerances, and inspection for form-milling cutters. Included in these are involute type, straight-sided for rack or worm thread generation, form relieved, indexable carbide insert (ICI), and special form.

Single copy price: $98.00

Obtain an electronic copy from: tech@agma.org

Order from: tech@agma.org

Send comments (with copy to psa@ansi.org) to: aboutaleb@agma.org

AGMA (American Gear Manufacturers Association)

Reaffirmation

BSR/AGMA 1003-2007 (R201x), Tooth Proportions for Fine-Pitch Spur and Helical Gearing (reaffirmation of ANSI/AGMA 1003-2007 (R2014))

This standard is applicable to external spur and helical gears with diametral pitch of 20 through 120 and a profile angle of 20 degrees.

Single copy price: $80.00

Obtain an electronic copy from: tech@agma.org

Order from: tech@agma.org

Send comments (with copy to psa@ansi.org) to: aboutaleb@agma.org

BSR/AGMA 1103-2007 (R201x), Tooth Proportions for Fine-Pitch Spur and Helical Gearing - Metric Edition (reaffirmation of ANSI/AGMA 1103-2007 (R2014))

This standard is applicable to external spur and helical gears with 1.25 through 0.2 module and a profile angle of 20 degrees.

Single copy price: $72.00

Obtain an electronic copy from: tech@agma.org

Order from: tech@agma.org

Send comments (with copy to psa@ansi.org) to: aboutaleb@agma.org

AGMA (American Gear Manufacturers Association)

Revision

BSR/AGMA 1102-CXX-201x, Tolerance Specification for Gear Hobs (revision and redesignation of ANSI/AGMA 1102-2013)

This standard provides specifications for nomenclature, dimensions, tolerances, and inspection for gear hobs for modules 0.63 to 40 mm. It establishes a basis for understanding the use and manufacture of these tools.

Single copy price: $87.00

Obtain an electronic copy from: tech@agma.org

Order from: tech@agma.org

Send comments (with copy to psa@ansi.org) to: aboutaleb@agma.org

ASTM (ASTM International)

New Standard

BSR/ASTM WK57930-201x, Specification for Detonation Flame Arresters (new standard)

https://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org

Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM WK62755-201x, Test Method for Filament Bind of Single Fibers in Synthetic Turf (new standard)

https://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org

Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM WK63871-201x, Test Method for Playground Surface Impact Testing in a Laboratory at a Specified Test Height (new standard)

https://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org

Send comments (with copy to psa@ansi.org) to: Same

ASTM (ASTM International)

Reaffirmation

BSR/ASTM F2679-2015 (R201x), Specification for 6 mm Projectiles Used with Airsoft Guns (reaffirmation of ANSI/ASTM F2679-2015)

https://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org

Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F2748-2015 (R201x), Specification for Airsoft Guns (reaffirmation of ANSI/ASTM F2748-2015)

https://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org

Send comments (with copy to psa@ansi.org) to: Same

ASTM (ASTM International)

Revision

BSR/ASTM D6300-201x, Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products and Lubricants (revision of ANSI/ASTM D6300-2017)

https://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org

Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F1387-201x, Specification for Performance of Piping and Tubing Mechanically Attached Fittings (revision of ANSI/ASTM F1387-1999 (R2012))

https://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org

Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F1882-201x, Specification for Residential Basketball Systems (revision of ANSI/ASTM F1882-2015)
https://www.astm.org/ANSI_SA
Single copy price: Free
Obtain an electronic copy from: cleonard@astm.org
Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org
Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F2123-201x, Practice for Treestand Instructions (revision of ANSI/ASTM F2123-2013)
https://www.astm.org/ANSI_SA
Single copy price: Free
Obtain an electronic copy from: cleonard@astm.org
Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org
Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F2614-201x, Specification for Condition 3 Bicycle Frames (revision of ANSI/ASTM F2614-2010 (R2014))
https://www.astm.org/ANSI_SA
Single copy price: Free
Obtain an electronic copy from: cleonard@astm.org
Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org
Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F2711-201x, Test Methods for Bicycle Frames (revision of ANSI/ASTM F2711-2008 (R2012))
https://www.astm.org/ANSI_SA
Single copy price: Free
Obtain an electronic copy from: cleonard@astm.org
Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org
Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F2802-201x, Specification for Condition 1 Bicycle Frames (revision of ANSI/ASTM F2802-2009 (R2015))
https://www.astm.org/ANSI_SA
Single copy price: Free
Obtain an electronic copy from: cleonard@astm.org
Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org
Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F2843-201x, Specification for Condition 0 Bicycle Frames (revision of ANSI/ASTM F2843-2010 (R2015))
https://www.astm.org/ANSI_SA
Single copy price: Free
Obtain an electronic copy from: cleonard@astm.org
Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org
Send comments (with copy to psa@ansi.org) to: Same

BSR/ASTM F2868-201x, Specification for Condition 2 Bicycle Frames (revision of ANSI/ASTM F2868-2010 (R2015))
https://www.astm.org/ANSI_SA
Single copy price: Free
Obtain an electronic copy from: cleonard@astm.org
Order from: Laura Klineburger, (610) 832-9696, accreditation@astm.org
Send comments (with copy to psa@ansi.org) to: Same

AWWA (American Water Works Association)

Revision

BSR/AWWA C209-201x, Tape Coatings for Steel Water Pipe and Fittings (revision of ANSI/AWWA C209-2013)
This standard describes protective coatings that consist of liquid adhesives and tapes and their applications to steel water pipe with fittings to be used for underground and underwater pipelines.
Single copy price: Free
Obtain an electronic copy from: ETSsupport@awwa.org
Order from: AWWA, Attn: Vicki David, vdavid@awwa.org
Send comments (with copy to psa@ansi.org) to: AWWA, Attn: Paul Olson, polson@awwa.org
This standard describes protective coatings that consist of liquid adhesives and tapes and their applications to steel water pipe with fittings to be used for underground and underwater pipelines.
Single copy price: Free
Obtain an electronic copy from: ETSsupport@awwa.org
Order from: AWWA, Attn: Vicki David, vdavid@awwa.org
Send comments (with copy to psa@ansi.org) to: AWWA, Attn: Paul Olson, polson@awwa.org

AWWA (American Water Works Association)

Revision

BSR/AWWA B501-201x, Sodium Hydroxide (Caustic Soda) (revision of ANSI/AWWA B501-2013)
This standard describes sodium hydroxide, anhydrous and liquid, for use in the treatment of potable water, wastewater, or reclaimed water.
Single copy price: Free
Obtain an electronic copy from: ETSsupport@awwa.org
Order from: AWWA, Attn: Vicki David, vdavid@awwa.org
Send comments (with copy to psa@ansi.org) to: AWWA, Attn: Paul Olson, polson@awwa.org

ECIA (Electronic Components Industry Association)

New Standard

BSR/EIA 364-120-201x, Electrolytic Erosion Test Procedure for Electrical Connectors (new standard)
This standard provides test procedures for electrolytic erosion.
Single copy price: $84.00
Order from: Global Engineering Documents, (800) 854-7179, www.global.ihs.com
Send comments (with copy to psa@ansi.org) to: Ed Mikoski, emikoski@ecianow.org

IAPMO (ASSE Chapter) (ASSE International Chapter of IAPMO)

Revision

BSR/ASSE Series 16000-201x, Professional Qualifications Standard for Inspectors and Plans Examiners (revision of ANSI/ASSE Series 16000-2012)
The purpose of this standard is to provide minimum performance criteria, identified by industry consensus, for Plumbing Inspectors, Mechanical Inspectors, Plumbing Plans Examiners and Mechanical Plans Examiners for both residential and commercial applications.
Single copy price: $Draft standard is available free of charge.
Obtain an electronic copy from: marianne.waickman@asse-plumbing.org
Send comments (with copy to psa@ansi.org) to: marianne.waickman@asse-plumbing.org

INMM (ASC N14) (Institute of Nuclear Materials Management)

Revision

BSR N14.1-201x, Uranium Hexafluoride - Packagings for Transport (revision of ANSI N14.1-2012)
This standard provides criteria for packagings used for transport of uranium hexafluoride (UF6). It includes specific information on design and fabrication requirements for the procurement of new UF6 packagings for transportation of 0.2205 lb. (0.1 kg) or more of UF6. This standard also defines the requirements for in-service inspections, cleanliness, and maintenance for packagings in service. Packagings currently in service and not specifically defined in this standard are acceptable for use, provided that they are used within their original design limitations and are inspected, tested, and maintained so as to comply with the intent of this standard. Also included are cylinder loadings; shipping requirements; and requirements for valves, plugs, and valve protectors.
Single copy price: Free
Obtain an electronic copy from: N14Secretary@gmai.com

NEMA (National Electrical Manufacturers Association)

New Standard

BSR/NEMA HN 1-201x, Manufacturer Disclosure Statement for Medical Device Security (new standard)

Information provided on the MDS2 form is intended to assist professionals responsible for security risk assessment processes in their management of medical device security issues. The information on the MDS2 form is not intended, and may be inappropriate, for other purposes.

Single copy price: Free

Obtain an electronic copy from: zhornberger@medicalimaging.org

Send comments (with copy to psa@ansi.org) to: zhornberger@medicalimaging.org

SAIA (ASC A11) (Scaffold & Access Industry Association)

New Standard

BSR/SAIA A11.1-201x, Standard for Testing and Rating Scaffold Assemblies and Components (new standard)

This standard provides methods for testing and rating the performance of the following:

- Tube and coupler scaffold components;
- Welded frame scaffold assemblies;
- System scaffold assemblies and components;
- Guardrail scaffold components;
- Screwjack scaffold components;
- Caster (with lever-actuated brake and swivel lead) scaffold components;
- Putlog scaffold assemblies;
- Side and end bracket scaffold components;
- Mobile work stands;
- Attachable ladder scaffold assemblies and components;
- Base-widening outrigger scaffold components; and
- Stair units.

Single copy price: $45.00 (SAIA Members); $55.00 (Nonmembers)

Obtain an electronic copy from: deanna@saiaonline.org

Send comments (with copy to psa@ansi.org) to: deanna@saiaonline.org

UL (Underwriters Laboratories, Inc.)

Revision

BSR/UL 763-201x, Standard for Safety for Motor-Operated Commercial Food Preparing Machines (revision of ANSI/UL 763-2018)

This proposal for UL 763 covers:

(1) Power supplies;
(2) Grounding continuity test;
(3) Proposed requirements for immersion blenders;
(4) Strain relief test;
(5) Leakage current test;
(6) Insulating tape; and
(7) Intentionally ungrounded parts.

Single copy price: Free

Obtain an electronic copy from: https://csds.ul.com/Home/ProposalsDefault.aspx

Order from: http://www.shopulstandards.com

Send comments (with copy to psa@ansi.org) to: Follow the instructions in the following website to enter comments into the CSDS Work Area: https://csds.ul.com/Home/ProposalsDefault.aspx

Comment Deadline: July 9, 2019

Reaffirmations and withdrawals available electronically may be accessed at: webstore.ansi.org

ASME (American Society of Mechanical Engineers)

New Standard

BSR/ASME TES-1-201x, Safety Standards for Thermal Energy Storage Systems; Molten Salt (new standard)

Establishes requirements for the design, construction, installation, inspection, testing, commissioning, maintenance, operation, and decommissioning of molten salt thermal energy storage (TES) systems.

Single copy price: Free

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

Order from: Mayra Santiago, ASME; ansibox@asme.org

Send comments (with copy to psa@ansi.org) to: Nicole Gomez, (212) 591-8720, ansibox@asme.org

Technical Reports Registered with ANSI

Technical Reports Registered with ANSI are not consensus documents. Rather, all material contained in Technical Reports Registered with ANSI is informational in nature. Technical reports may include, for example, reports of technical research, tutorials, factual data obtained from a survey carried out among standards developers and/or national bodies, or information on the "state of the art" in relation to standards of national or international bodies on a particular subject.

Immediately following the end of a 30-day announcement period in Standards Action, the Technical Report will be registered by ANSI. Please submit any comments regarding this registration to the organization indicated, with a copy to the PSA Center, American National Standards Institute, 25 West 43rd Street, New York, NY 10036 or E-Mail to psa@ansi.org.

Comment Deadline: June 9, 2019

ASA (ASC S3) (Acoustical Society of America)

Reaffirmation

ASA S3/SC1.4 TR-2014 (R2019), Sound Exposure Guidelines for Fishes and Sea Turtles: A Technical Report Prepared by ANSI-Accredited Standards Committee S3/SC 1 and Registered with ANSI (reaffirm technical report)

Presents the outcome of a Working Group that was established to determine broadly applicable sound exposure guidelines for fishes and sea turtles. After consideration of the diversity of fish and sea turtles, guidelines were developed for broad groups of animals, defined by the way they detect sound. Different sound sources were considered in terms of their acoustic characteristics and appropriate metrics defined for measurement of the received levels. The resultant sound exposure guidelines are presented in a set of tables. In some cases numerical guidelines are provided, expressed in appropriate metrics. When there were insufficient data to support numerical values, the relative likelihood of effects occurring was evaluated, although the actual likelihood of effects depends on the received level. These sound-exposure guidelines, which are based on the best scientific information at the time of writing, should be treated as interim. Expectation is that with more research, the guidelines can be refined and more cells in the tables completed. Recommendations are put forward defining the research requirements of highest priority for extending these interim exposure guidelines.

Single copy price: $159.00

Order from: Caryn Mennigke, (631) 390-0215, asastds@acousticalsociety.org

ITI (INCITS) (InterNational Committee for Information Technology Standards)

INCITS/ISO/IEC TS 22237-1:2018 [2019], Information technology - Data centre facilities and infrastructures - Part 1: General concepts (technical report)

This technical report identifies IoT scenarios and use cases based on real-world applications and requirements. The use cases provide a practical context for considerations on interoperability and standards based on user experience. They also clarify where existing standards can be applied and highlight where standardization work is needed.

Single copy price: $60.00

Order from: https://webstore.ansi.org/

INCITS/ISO/IEC TS 22237-2:2018 [2019], Information technology - Data centre facilities and infrastructures - Part 2: Building construction (technical report)

Addresses the construction of buildings and other structures which provide accommodation for data centres based upon the criteria and classification for "physical security" within ISO/IEC TS 22237-1 in support of availability. Specifies requirements and recommendations for the following: (a) location and site selection, (b) building construction, (c) building configuration, (d) fire protection, and (e) quality construction measures. Safety and electromagnetic compatibility (EMC) requirements are outside the scope of this document and are covered by other standards and regulations. However, information given in this document may be of assistance in meeting these standards and regulations. Conformance of data centres to the present document is covered in Clause 4.

Single copy price: $60.00

Order from: https://webstore.ansi.org/

INCITS/ISO/IEC TS 22237-3:2018 [2019], Information technology - Data centre facilities and infrastructures - Part 3: Power distribution (technical report)

Addresses power supplies to, and power distribution within, data centres based upon the criteria and classifications for "availability", "physical security", and "energy efficiency enablement" within ISO/IEC TS 22237-1. Specifies requirements and recommendations for (a) power supplies to data centres, (b) power distribution systems within data centres, (c) facilities for both normal and emergency lighting, (d) equipotential bonding and earthing, (e) lightning protection, and (f) devices for the measurement of the power consumption characteristics at points along the power distribution system and their integration within management tools. Safety and electromagnetic compatibility (EMC) requirements are outside the scope of this document and are covered by other standards and regulations. However, information given in this document may be of assistance in meeting these standards and regulations. Conformance of data centres to the present document is covered in Clause 4.

Single copy price: $162.00

Order from: https://webstore.ansi.org/

INCITS/ISO/IEC TS 22237-4:2018 [2019], Information technology - Data centre facilities and infrastructures - Part 4: Environmental control (technical report)

Addresses environmental control within data centres based upon the criteria and classifications for "availability", "security", and "energy efficiency enablement" within ISO/IEC TS 22237-1. Specifies requirements and recommendations for (a) temperature control, (b) fluid movement control, (c) relative humidity control, (d) particulate control, (e) vibration, (f) floor layout and equipment locations, (g) energy saving practices, and (h) physical security of environmental control systems. Issues related to electromagnetic environment can be found in ISO/IEC TS 22237□6.

Single copy price: $138.00

Order from: https://webstore.ansi.org/

INCITS/ISO/IEC TS 22237-5:2018 [2019], Information technology - Data centre facilities and infrastructures - Part 5: Telecommunications cabling infrastructure (technical report)

Addresses the wide range of telecommunications cabling infrastructures within data centres based upon the criteria and classifications for "availability" within ISO/IEC TS 22237-1. Specifies requirements and recommendations for (a) information technology and network telecommunications cabling (e.g., SAN and LAN); (b) general information technology cabling to support the operation of the data centre; (c) telecommunications cabling to monitor and control, as appropriate, power distribution, environmental control and physical security of the data centre; (d) other building automation cabling; and (e) pathways, spaces, and enclosures for the telecommunications cabling infrastructures. Safety and electromagnetic compatibility (EMC) requirements are outside the scope of this document and are covered by other standards and regulations. However, information given in this document may be of assistance in meeting these standards and regulations.

Single copy price: $162.00

Order from: https://webstore.ansi.org/

INCITS/ISO/IEC TS 22237-6:2018 [2019], Information technology - Data centre facilities and infrastructures - Part 6: Security systems (technical report)

Addresses the physical security of data centres based upon the criteria and classifications for "availability", "security", and "energy efficiency enablement" within ISO/IEC TS 22237-1. Provides designations for the data centre spaces defined in ISO/IEC TS 22237-1. Specifies requirements and recommendations for those data centre spaces, and the systems employed within those spaces, in relation to protection against (a) unauthorized access addressing constructional, organizational, and technological solutions; (b) fire events igniting within data centre spaces; and (c) other events within or outside the data centre spaces, which would affect the defined level of protection. Safety and electromagnetic compatibility (EMC) requirements are outside the scope of this document and are covered by other standards and regulations. However, information given in this document may be of assistance in meeting these standards and regulations.

Single copy price: $162.00

Order from: https://webstore.ansi.org/

INCITS/ISO/IEC TS 22237-7:2018 [2019], Information technology - Data centre facilities and infrastructures - Part 7: Management and operational information (technical report)

Specifies processes for the management and operation of data centres. The primary focus of this document is the operational processes necessary to deliver the expected level of resilience, availability, risk management, risk mitigation, capacity planning, security and energy efficiency. The secondary focus is on management processes to align the actual and future demands of users.

Single copy price: $185.00

Order from: https://webstore.ansi.org/

INCITS/ISO/IEC TR 38505-2:2018 [2019], Information technology - Governance of IT - Governance of data - Part 2: Implications of ISO/IEC 38505-1 for data management (technical report)

Provides guidance to the members of governing bodies of organizations and their executive managers on the implications of ISO/IEC 38505-1 for data management. It assumes understanding of the principles of ISO/IEC 38500 and familiarization with the data accountability map and associated matrix of considerations, as presented in ISO/IEC 38505-1. This document enables an informed dialogue between the governing body and the senior/executive management team of an organization to ensure that the data use throughout the organization aligns with the strategic direction set by the governing body. This document covers the following: identifying the information that a governing body requires in order to evaluate and direct the strategies and policies relating to a data-driven business and identifying the capabilities and potential of measurement systems that can be used to monitor the performance of data and its uses.

Single copy price: $92.50

Order from: https://webstore.ansi.org/

INCITS/ISO/IEC TR 22417:2017 [2019], Information technology - Internet of Things (IoT) - IoT Use cases (technical report)

Identifies IoT scenarios and use cases based on real-world applications and requirements. The use cases provide a practical context for considerations on interoperability and standards based on user experience. They also clarify where existing standards can be applied and highlight where standardization work is needed.

Single copy price: $60.00

Order from: https://webstore.ansi.org/

Projects Withdrawn from Consideration

In accordance with clause 4.2.1.3.3 Discontinuance of a standards project of the ANSI Essential Requirements, an accredited standards developer may abandon the processing of a proposed new or revised American National Standard or portion thereof if it has followed its accredited procedures. The following projects have been withdrawn accordingly:

NEMA (ASC C136) (National Electrical Manufacturers Association)

BSR C136.4-2003 (S201x), Series Sockets and Series Socket Receptacles (stabilized maintenance of ANSI C136.4-2003 (R2013))

This standard covers the following equipment for roadway and area luminaries: (a) Series sockets having medium impact strength and intended for service at high temperatures, (b) Series sockets having high impact strength and intended for service at limited temperatures, and (c) Series-socket receptacles (called the receptacles in this standard) in the 5000 V classification.

Inquiries may be directed to David Richmond, (703) 841-3234, David.Richmond@nema.org

TAPPI (Technical Association of the Pulp and Paper Industry)

BSR/TAPPI T 684 om-201x, Gross heating value of black liquor (new standard)

This method determines the gross (or high) heating value of black liquor, containing up to 55% by mass of water, derived from sodium-based kraft pulping.

Inquiries may be directed to Priscila Briggs, (770) 209-7249, standards@tappi.org

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, the following American National Standards have been withdrawn as an ANS.

AAMI (Association for the Advancement of Medical Instrumentation)

ANSI/AAMI/ISO 11712-2014, Anaesthetic and respiratory equipment - Supralaryngeal airways and connectors

Questions may be directed to: Colleen Elliott, (703) 253-8261, celliott@aami.org

ANSI/AAMI/ISO 26782-2015, Anaesthetic and respiratory equipment - Spirometers intended for the measurement of time forced expired volumes in humans

Questions may be directed to: Colleen Elliott, (703) 253-8261, celliott@aami.org

Call for Members (ANS Consensus Bodies)

Directly and materially affected parties who are interested in participating as a member of an ANS consensus body for the standards listed below are requested to contact the sponsoring standards developer directly and in a timely manner.

BHCOE (Behavioral Health Center of Excellence)

Office: 7083 Hollywood Boulevard
#565
Los Angeles, CA 90028
Contact: Sara Gershfeld Litvak
Phone: (310) 627-2746
E-mail: sara@bhcoe.org

BSR/BHCOE 101-201x, Standard for the Documentation of Clinical Records for Applied Behavior Analysis Service Providers (new standard)

ECIA (Electronic Components Industry Association)

Office: 13873 Park Center Road
Suite 315
Herndon, VA 20171
Contact: Laura Donohoe
Phone: (571) 323-0294
E-mail: ldonohoe@ecianow.org

BSR/EIA 364-120-201x, Electrolytic Erosion Test Procedure for Electrical Connectors (new standard)

EOS/ESD (ESD Association, Inc.)

Office: 7900 Turin Rd., Bldg. 3
Rome, NY 13440
Contact: Christina Earl
Phone: (315) 339-6937
E-mail: cearl@esda.org

BSR/ESD S6.1-201x, ESD Association Standard for the Protection of Electrostatic Discharge Susceptible Items - Grounding (revision of ANSI/ESD S6.1-2014)

NEMA (ASC C136) (National Electrical Manufacturers Association)

Office: 1300 North 17th Street
Suite 900
Rosslyn, VA 22209
Contact: David Richmond
Phone: (703) 841-3234
E-mail: David.Richmond@nema.org

BSR C136.4-201X, Series Sockets and Series Socket Receptacles (revision of ANSI C136.4-2003 (R2013))

NSF (NSF International)

Office: 789 N. Dixboro Road
Ann Arbor, MI 48105-9723
Contact: Monica Leslie
Phone: (734) 827-5643
E-mail: mleslie@nsf.org

BSR/NSF/CAN 60-201x (i83r1), Drinking Water Treatment Chemicals - Health Effects (revision and redesignation of ANSI/NSF 60-2018)

BSR/NSF/CAN 61-201x (i146r1), Drinking Water System Components - Health Effects (revision and redesignation of ANSI/NSF 61-2018)

SAIA (ASC A11) (Scaffold & Access Industry Association)

Office: 400 Admiral Boulevard
Kansas City, MO 64106
Contact: DeAnna Martin
Phone: (816) 595-4860
E-mail: deanna@saiaonline.org

BSR/SAIA A11.1-201x, Standard for Testing and Rating Scaffold Assemblies and Components (new standard)

TAPPI (Technical Association of the Pulp and Paper Industry)

Office: 15 Technology Parkway South
Suite 115
Peachtree Corners, GA 30092
Contact: Deborah Dodson
Phone: (770) 209-7278
E-mail: standards@tappi.org

BSR/TAPPI T 401 om-2015 (R201x), Fiber analysis of paper and paperboard (reaffirmation of ANSI/TAPPI T 401 om-2015)

BSR/TAPPI T 563 om-2015 (R201x), Equivalent Black Area (EBA) and count of visible dirt in pulp, paper and paperboard by image analysis (reaffirmation of ANSI/TAPPI T 563 om-2015)

BSR/TAPPI T 573 sp-2015 (R201x), Accelerated temperature aging of printing and writing paper by dry oven exposure apparatus (reaffirmation of ANSI/TAPPI T 573 sp-2015)

BSR/TAPPI T 650 om-2015 (R201x), Solids content of black liquor (reaffirmation of ANSI/TAPPI T 650 om-2015)

Call for Members (ANS Consensus Bodies)

Call for Committee Members

ASC O1 – Safety Requirements for Woodworking Machinery

Are you interested in contributing to the development and maintenance of valuable industry safety standards? The ASC O1 is currently looking for members in the following categories:

- General Interest
- Government
- Producer
- User

If you are interested in joining the ASC O1, contact WMMA Associate Director Jennifer Miller at jennifer@wmma.org.

Final Actions on American National Standards

The standards actions listed below have been approved by the ANSI Board of Standards Review (BSR) or by an ANSI-Audited Designator, as applicable.

AAFS (American Academy of Forensic Sciences)

New Standard

ANSI/ASB Std 019-2019, Wildlife Forensics General Standards (new standard): 5/3/2019

ANSI/ASB Std 028-2019, Wildlife Forensics Morphology Standard (new standard): 5/3/2019

ANSI/ASB Std 029-2019, Report Writing in Wildlife Forensics: Morphology and Genetics (new standard): 5/3/2019

ANSI/ASB Std 046-2019, Wildlife Forensics Validation Standards - STR Analysis (new standard): 5/3/2019

ANSI/ASB Std 047-2019, Wildlife Forensics Validation Standard - Validating New Primers for Sequencing (new standard): 5/3/2019

ANSI/ASB Std 048-2019, Wildlife Forensic DNA Standard Procedures (new standard): 5/3/2019

ANSI/ASB Std 072-2019, Standards for the Validation of Procedures in Bloodstain Pattern Analysis (new standard): 5/3/2019

AAMI (Association for the Advancement of Medical Instrumentation)

Addenda

ANSI/AAMI/ISO 11137-1/Amd2-2019, Sterilization of health care products - Radiation - Part 1: Requirements for development, validation and routine control of a sterilization process for medical devices - Amendment 2: Revision to 4.3.4 and 11.2 (addenda to ANSI/AAMI/ISO 11137-1-2006 (R2015)): 5/1/2019

Reaffirmation

ANSI/AAMI/ISO 11137-2, third edition-2013 (R2019), Sterilization of health care products - Radiation - Part 2: Establishing the sterilization dose (reaffirmation of ANSI/AAMI/ISO 11137-2, third edition-2013): 5/1/2019

AISI (American Iron and Steel Institute)

Revision

ANSI/AISI S230-2019, North American Standard for Cold-Formed Steel Framing - Prescriptive Method for One- and Two-Family Dwellings (revision of ANSI/AISI S230-2015): 4/30/2019

AMCA (Air Movement and Control Association)

Revision

ANSI/AMCA Standard 205-2019, Energy Efficiency Classification for Fans (revision and redesignation of ANSI/AMCA 205-2012): 5/3/2019

API (American Petroleum Institute)

New National Adoption

ANSI/API RP 2TOP-2019, Topsides Structure (national adoption with modifications of ISO 19901-3:2010): 5/1/2019

ASA (ASC S2) (Acoustical Society of America)

Reaffirmation

ANSI/ASA S2.73-2013/ISO 10819:2013 (R2019), Mechanical Vibration and Shock - Hand-arm Vibration - Measurement and Evaluation of the Vibration Transmissibility of Gloves at the Palm of the Hand (a nationally adopted international standard) (reaffirm a national adoption ANSI/ASA S2.73-2013/ISO 10819:2013): 5/3/2019

ASA (ASC S3) (Acoustical Society of America)

New Standard

ANSI/ASA S3.71-2019, Methods for Measuring the Effect of Head-worn Devices on Directional Sound Localization in the Horizontal Plane (new standard): 4/30/2019

ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.)

Reaffirmation

ANSI/ASHRAE Standard 41.8-2016 (R2019), Standard Methods for Liquid Flow Measurement (reaffirmation of ANSI/ASHRAE Standard 41.8-2016): 5/1/2019

Revision

ANSI/ASHRAE Standard 30-2019, Method of Testing Liquid Chillers (revision of ANSI/ASHRAE Standard 30-2017): 5/1/2019

ASME (American Society of Mechanical Engineers)

Reaffirmation

ANSI/ASME Y14.31-2014 (R2019), Undimensioned Drawings (reaffirmation of ANSI/ASME Y14.31-2014): 5/3/2019

ANSI/ASME Y14.35-2014 (R2019), Revision of Engineering Drawings and Associated Documents (reaffirmation of ANSI/ASME Y14.35-2014): 5/3/2019

Revision

ANSI/ASME P30.1-2019, Planning for Load Handling Activities (revision of ANSI/ASME P30.1-2014): 5/3/2019

GTESS (Georgia Tech Energy & Sustainability Services)

Revision

ANSI/MSE 50028-2-2019, Superior Energy Performance(R) 50001 Program - Requirements for verification bodies for use in accreditation or other forms of recognition (revision and redesignation of ANSI/MSE 50028 -2016): 5/3/2019

IAPMO (ASSE Chapter) (ASSE International Chapter of IAPMO)

New Standard

ANSI/ASSE 1008-2019, Performance Requirements for Plumbing Aspects of Residential Food Waste Disposer Units (new standard): 4/30/2019

ITI (INCITS) (InterNational Committee for Information Technology Standards)

Addenda

INCITS 540-2018/AM 1-2019, Information technology - Fibre Channel - Non-Volatile Memory Express - Amendment 1 (FC-NVMe-AM 1) (addenda to INCITS 540-2018): 4/30/2019

New Standard

INCITS 545-2019, Information technology - Fibre Channel - Framing and Signaling - 5 (FC-FS-5) (new standard): 4/30/2019

NEBB (National Environmental Balancing Bureau)

Revision

ANSI/NEBB Standard S110-2018, Rev. 2-2018, Whole Building Technical Commissioning of New Construction (revision and redesignation of ANSI/NEBB S110-2018): 5/1/2019

ANSI/NEBB Standard S120-2016, Rev. 2-2018, Technical Retro-Commissioning of Existing Buildings (revision and redesignation of BSR/NEBB S120-2016, Rev. 2-201x): 5/1/2019

NEMA (ASC C136) (National Electrical Manufacturers Association)

Revision

ANSI C136.37-2019, Standard for Roadway and Area Lighting Equipment - Solid State Light Sources Used in Roadway and Area Lighting (revision of ANSI C136.37-2011): 5/3/2019

SCTE (Society of Cable Telecommunications Engineers)

Revision

ANSI/SCTE 135-03-2019, DOCSIS 3.0 Part 3: Security Services (revision and redesignation of ANSI/SCTE 135-3-2013): 4/30/2019

ANSI/SCTE 135-04-2019, DOCSIS 3.0 Part 4: Operations Support Systems Interface (revision and redesignation of ANSI/SCTE 135-4-2013): 4/30/2019

ANSI/SCTE 162-2019, Emergency Alert Signaling for the Home Network (revision of ANSI/SCTE 162-2019): 5/3/2019

UL (Underwriters Laboratories, Inc.)

Reaffirmation

ANSI/UL 80-2009 (R2019), Standard for Safety for Steel Tanks for Oil-Burner Fuels and Other Combustible Liquids (reaffirmation of ANSI/UL 80-2009 (R2014)): 4/26/2019

ANSI/UL 62109-1-2014a (R2019), Standard for Safety for Power Converters for Use in Photovoltaic Power Systems - Part 1: General Requirements (reaffirmation of ANSI/UL 62109-1-2014a): 4/30/2019

Revision

ANSI/UL 428A-2019, Standard for Electrically Operated Valves for Gasoline and Gasoline/Ethanol Blends with Nominal Ethanol Concentrations Up to 85 Percent (E0 - E85) (revision of ANSI/UL 428A-2015): 4/29/2019

ANSI/UL 758-2019a, Standard for Safety for Appliance Wiring Material (revision of ANSI/UL 758-2017): 4/29/2019

ANSI/UL 962-2019, Standard for Household and Commercial Furnishings (revision of ANSI/UL 962-2017): 5/6/2019

ANSI/UL 962-2019a, Standard for Safety for Household and Commercial Furnishings (revision of ANSI/UL 962-2017): 5/6/2019

ANSI/UL 962-2019b, Standard for Safety for Household and Commercial Furnishings (revision of ANSI/UL 962-2017): 5/6/2019

ANSI/UL 2431-2019, Standard for Durability of Fire Resistive Coatings and Materials (revision of ANSI/UL 2431-2014): 5/2/2019

ANSI/UL 60745-2-9-2009 (R2019), Standard for Safety for Hand-Held Motor-Operated Electric Tools - Safety - Part 2-9: Particular Requirements for Tappers (revision of ANSI/UL 60745-2-9-2009 (R2014)): 4/30/2019

Project Initiation Notification System (PINS)

ANSI Procedures require notification of ANSI by ANSI-accredited standards developers (ASD) of the initiation and scope of activities expected to result in new or revised American National Standards (ANS). Early notification of activity intended to reaffirm or withdraw an ANS and in some instances a PINS related to a national adoption is optional. The mechanism by which such notification is given is referred to as the PINS process. For additional information, see clause 2.4 of the ANSI Essential Requirements: Due Process Requirements for American National Standards.

Following is a list of proposed actions and new ANS that have been received recently from ASDs. Please also review the section in Standards Action entitled "American National Standards Maintained Under Continuous Maintenance" for additional or comparable information with regard to standards maintained under the continuous maintenance option. Use the following Public Document Library url to access PDF & EXCEL reports of approved & proposed ANS: List of Approved and Proposed ANS

Directly and materially affected interests wishing to receive more information or to submit comments are requested to contact the standards developer directly within 30 days of the publication of this announcement.

AAFS (American Academy of Forensic Sciences)

Contact: Teresa Ambrosius, (719) 453-1036, tambrosius@aafs.org
410 North 21st Street, Colorado Springs, CO 80904

New Standard

BSR/ASB Std 092-201x, Canine Detection of Explosives (new standard)

Stakeholders: Federal, state, local and private sector canine detection teams, scientific and non-profit community involved in explosives detection, and biological detectors involved in research.

Project Need: Currently, there are no consensus standards for explosive detection canine teams (canine handler and canine) specifically dedicated to specialized protocols in explosives detection work. It is anticipated that implementation of universal standards will result in accurate and consistent results.

This standard provides the training requirements for a canine team (canine handler and canine), and details follow-on assessments for trained canine teams, in the field of explosives detection. This standard is intended to be used as the basis for all phases of the training process and includes certification procedures, training and assessments, record keeping, and document management.

ANS (American Nuclear Society)

Contact: Kathryn Murdoch, (708) 579-8268, kmurdoch@ans.org
555 North Kensington Avenue, La Grange Park, IL 60526

Revision

BSR/ANS 8.21-201x, Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors (revision of ANSI/ANS 8.21-1995 (R2019))

Stakeholders: USDOE, USDOE contractors, USNRC, and USNRC licensees.

Project Need: The applications of Raschig Rings as a neutron absorber are rapidly decreasing and the need to support a separate standard for them is tenuous. In principle, Raschig Rings are a fixed neutron absorber and required guidance for their use can be captured in ANS 8.21 and thereby preserve specific requirements associated with absorber rings.

This standard provides guidance for the use of fixed neutron absorbers, including Raschig Rings or similar absorbers as an integral part of nuclear facilities or fissionable material process equipment outside reactors, where such absorbers provide criticality safety control.

BHCOE (Behavioral Health Center of Excellence)

Contact: Sara Gershfeld Litvak, (310) 627-2746, sara@bhcoe.org
7083 Hollywood Boulevard, #565, Los Angeles, CA 90028

New Standard

BSR/BHCOE 101-201x, Standard for the Documentation of Clinical Records for Applied Behavior Analysis Service Providers (new standard)

Stakeholders: Consumers, service provider, private insurance, public insurance.

Project Need: Clinical record keeping is an integral component in clinical best practice and the delivery of quality clinical services. Regardless of the form of the records (i.e., electronic or paper), appropriate clinical records should enable continuity of care and should enhance communication between all parties impacted by the delivery of services.

This standard describes appropriate documentation for Applied Behavior Analysis Service delivery and how to provide accurate and supportive medical record documentation.

EOS/ESD (ESD Association, Inc.)

Contact: Christina Earl, (315) 339-6937, cearl@esda.org
7900 Turin Rd., Bldg. 3, Rome, NY 13440

Revision

BSR/ESD S6.1-201x, ESD Association Standard for the Protection of Electrostatic Discharge Susceptible Items - Grounding (revision of ANSI/ESD S6.1-2014)

Stakeholders: Electronics industry including telecom, consumer, medical, and industrial.

Project Need: This standard specifies the parameters, materials, equipment, and test procedures necessary to choose, establish, verify, and maintain an Electrostatic Discharge (ESD) Control grounding system for use within an ESD Protected Area (EPA) for protection of ESD susceptible items. This Standard also specifies the criteria for establishing ESD Bonding for protection of ESD susceptible items in field service or other remote operations.

This standard applies to bonding and grounding for the prevention of ESD in an EPA. The procedures, materials, and techniques specified in this standard may not be applicable for grounding of electrical sources operating at frequencies above 400 Hz. Electrically initiated explosive devices and hazardous areas with flammable atmospheres may require additional considerations that may not be adequately covered by these requirements.

IAPMO (ASSE Chapter) (ASSE International Chapter of IAPMO)

Contact: Marianne Waickman, (708) 995-3015, marianne.waickman@asse-plumbing.org
18927 Hickory Creek Drive, Suite 220, Mokena, IL 60448

Revision

BSR/ASSE Series 5000-201x, Cross-Connection Control Professional Qualifications Standard (revision and redesignation of ANSI/IAPMO Series 5000-2015)

Stakeholders: Cross-connection control professionals, plumbers, pipefitters, sprinklerfitters, homeowners, building owners/operators, public and private water authorities, municipalities, inspectors.

Project Need: This standard is due for revision under the normal revision cycle.

This standard establishes uniform minimum requirements for qualified backflow prevention assembly testers, cross-connection control surveyors, backflow prevention assembly repairers, fire-protection system cross-connection control testers, and backflow prevention program administrators.

BSR/ASSE Series 15000-201x, Professional Qualifications Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems. (revision of ANSI/ASSE Series 15000-2015)

Stakeholders: Sprinklerfitters, fire-protection professionals, homeowners, building owners/operators, fire marshals, municipalities, inspectors.

Project Need: This project is due for revision under the normal revision cycle.

This standard applies to a qualified individual who provides inspections, testing, or maintenance for water-based fire protection systems in compliance with installation, testing, and maintenance standards.

IEST (Institute of Environmental Sciences and Technology)

Contact: Jennifer Sklena, (847) 981-0100, jsklena@iest.org
1827 Walden Office Square, Suite 400, Schaumburg, IL 60173

New National Adoption

BSR/ISO 14644-3-201x, Cleanrooms and associated controlled environments - Part 3: Test methods (identical national adoption of ANSI/IEST/ISO 14644-3:2019)

Stakeholders: Anyone involved in the cleanroom industry including equipment manufacturers and users.

Project Need: Cleanrooms and associated controlled environments provide for the control of airborne contamination to levels appropriate for accomplishing contamination-sensitive activities. Products and processes that benefit from the control of airborne contamination include those in such industries as aerospace, microelectronics, pharmaceuticals, medical devices, healthcare, and food. This part of ISO 14644 sets out appropriate test methods for measuring the performance of an installation, a cleanroom or an associated controlled environment.

This part of ISO 14644 provides test methods in support of the operation for cleanrooms and clean zones to meet air cleanliness classifications and related controlled conditions. Tests for classification of cleanliness are described in ISO 14644-1(classification of air cleanliness by particle concentration and for macroparticles). Other related attribute levels can be determined using ISO 14644-8 (levels of air cleanliness by chemicals), ISO 14644-9 (levels of surface cleanliness by particle concentration), and ISO 14644-10 (levels of surface cleanliness by chemical concentration). Performance tests are specified for two types of cleanrooms and clean zones: those with unidirectional flow and those with non-unidirectional flow, in three possible occupancy states: as-built, at-rest, and operational.

NEMA (ASC C136) (National Electrical Manufacturers Association)

Contact: David Richmond, (703) 841-3234, David.Richmond@nema.org
1300 North 17th Street, Suite 900, Rosslyn, VA 22209

Revision

BSR C136.4-201X, Series Sockets and Series Socket Receptacles (revision of ANSI C136.4-2003 (R2013))

Stakeholders: Roadway and area lighting manufacturers, utilities, municipalities.

Project Need: Revision is needed to update voltage test levels from 500V to 5000V, and update terminology used in the document.

This standard covers the following equipment for roadway and area luminaries: (a) Series sockets having medium impact strength and intended for service at high temperatures, (b) Series sockets having high-impact strength and intended for service at limited temperatures, (c) Series-socket receptacles (called the receptacles in this standard) in the 5000 V classification

NFPA (National Fire Protection Association)

Contact: Dawn Michele Bellis, (617) 984-7246, dbellis@nfpa.org
One Batterymarch Park, Quincy, MA 02169

BSR/NFPA 70B-201x, Recommended Practice for Electrical Equipment Maintenance WRONG PROJ INTENT SYNTAXANSI/NFPA 70B -2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This recommended practice applies to preventive maintenance for electrical, electronic, and communication systems and equipment and is not intended to duplicate or supersede instructions that manufacturers normally provide. Systems and equipment covered are typical of those installed in industrial plants, institutional and commercial buildings, and large multifamily residential complexes. Consumer appliances and equipment intended primarily for use in the home are not included.

Revision

BSR/NFPA 14-201x, Standard for the Installation of Standpipe and Hose Systems (revision of ANSI/NFPA 14-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard covers the minimum requirements for the installation of standpipes and hose systems.

BSR/NFPA 45-201x, Standard on Fire Protection for Laboratories Using Chemicals (revision of ANSI/NFPA 45-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard shall apply to laboratory buildings, laboratory units, and laboratory work areas whether located above or below grade in which chemicals, as defined in NFPA 704 with one or more of the following hazard ratings are handled or stored:
health — 2, 3, or 4;
flammability — 2, 3, or 4; or
instability — 2, 3, or 4. (See also Section B.2.)
This standard shall apply to all educational laboratory units and instructional laboratory units in which any quantity of chemicals, as defined in NFPA 704 with one or more of the following hazard ratings, is handled or stored:
health — 2, 3, or 4;
flammability — 2, 3, or 4; or
instability — 2, 3, or 4. (See also Section B.2.)

BSR/NFPA 52-201x, Vehicular Natural Gas Fuel Systems Code (revision of ANSI/NFPA 52-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This code shall apply to the design, installation, operation, and maintenance of compressed-natural-gas (CNG) and liquefied-natural-gas (LNG) engine fuel systems on vehicles of all types and for fueling vehicle (dispensing) systems and facilities, and associated storage, including the following: (1) Original equipment manufacturers (OEMs), (2) Final-stage vehicle integrator/manufacturer (FSVIM), and (3) Vehicle fueling (dispensing) systems. This code shall apply to the design, installation, operation, and maintenance of LNG engine fuel systems on vehicles of all types, to their associated fueling (dispensing) facilities, and to LNG-to-CNG facilities with LNG storage in ASME containers of 100,000 gal (379 m^3) or less.

BSR/NFPA 59A-201x, Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG) (revision of ANSI/NFPA 59A-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard shall apply to the following: (1) The siting, design, construction, maintenance, and operation of facilities that produce, store, and handle liquefied natural gas (LNG) and (2) The training of personnel involved with LNG.

BSR/NFPA 67-201x, Guideline on Explosion Protection for Gaseous Mixtures in Pipe Systems (revision of ANSI/NFPA 67-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This guide applies to the design, installation, and operation of piping systems containing flammable gases where there is a potential for ignition. This guide addresses protection methods for use where the pipe explosion risk is due to either a deflagration or a detonation.

BSR/NFPA 69-201x, Standard on Explosion Prevention Systems (revision of ANSI/NFPA 69-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard applies to the design, installation, operation, maintenance, and testing of systems for the prevention of explosions by means of the following methods: (1) Control of oxidant concentration, (2) Control of combustible concentration, (3) Predeflagration detection and control of ignition sources, (4) Explosion suppression, (5) Active isolation, (6) Passive isolation, (7) Deflagration pressure containment, and (8) Passive explosion suppression.

BSR/NFPA 82-201x, Standard on Incinerators and Waste and Linen Handling Systems and Equipment (revision of ANSI/NFPA 82 -2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard covers requirements for the installation, maintenance, and use of waste and recyclables storage rooms, containers, handling systems, incinerators, compactors, and linen and laundry handling systems.

BSR/NFPA 85-201x, Boiler and Combustion Systems Hazards Code (revision of ANSI/NFPA 85-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This code applies to the following: (1) Single burner boilers, multiple burner boilers, stokers, and atmospheric fluidized bed boilers with a fuel input rating of 3.7 MWt (12.5 million Btu/hr) or greater; (2) Pulverized fuel systems at any heat input rate, and (3) Fired or unfired steam generators used to recover heat from combustion turbines [heat recovery steam generators (HRSGs)] and other combustion turbine exhaust systems at any heat input rate. This code covers design, installation, operation, maintenance, and training. This code covers strength of the structure, operation and maintenance procedures, combustion and draft control equipment, interlocks, alarms, and other related controls that are essential to safe equipment operation.

BSR/NFPA 211-201x, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances (revision of ANSI/NFPA 211 -2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard applies to the design, installation, maintenance, and inspection of all chimneys, fireplaces, venting systems, and solid-fuel-burning appliances.

BSR/NFPA 253-201x, Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source (revision of ANSI/NFPA 253-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This fire test response standard describes a procedure for measuring critical radiant flux behavior of horizontally mounted floor-covering systems exposed to a flaming ignition source in a graded, radiant heat energy environment within a test chamber. This fire test response standard measures the critical radiant flux at flameout and provides a basis for estimating one aspect of fire exposure behavior for floor covering systems.

BSR/NFPA 262-201x, Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces (revision of ANSI/NFPA 262-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard shall prescribe the methodology to measure flame travel distance and optical density of smoke for insulated, jacketed, or both, electrical wires and cables and optical fiber cables that are to be installed in plenums and other spaces used to transport environmental air without being enclosed in raceways.

BSR/NFPA 265-201x, Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls (revision of ANSI/NFPA 265-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard describes a test method for determining the contribution of textile or expanded vinyl wall coverings to room fire growth during specified fire exposure conditions. This test method shall be used to evaluate the flammability characteristics of textile or expanded vinyl wall coverings where such materials constitute the exposed interior surfaces of buildings and demountable, relocatable, full-height partitions used in open building interiors.

BSR/NFPA 276-201x, Standard Method of Fire Test for Determining the Heat Release Rate of Roofing Assemblies with Combustible Above-Deck Roofing Components (revision of ANSI/NFPA 276-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard describes a method for determining the heat release rate from below the deck of roofing assemblies that have combustible above-deck roofing components when the assemblies are exposed to a fire from below the roof deck. This test was originally developed as a part of FM 4450, Class 1 Insulated Steel Deck Roofs. The performance of the above-deck roofing assembly is evaluated by determining the heat release rate below the deck of the roof test specimen. This test method is based on the substitution method for measuring the heat release rate by using an auxiliary fuel (propane) to provide the surrogate heat release rate.

BSR/NFPA 285-201x, Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components (revision of ANSI/NFPA 285-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard provides a test method for determining the fire propagation characteristics of exterior non-load-bearing wall assemblies and panels used as components of curtain wall assemblies, that are constructed using combustible materials or that incorporate combustible components, and that are intended to be installed on buildings required to have exterior walls of noncombustible construction. The fire propagation characteristics are determined for post-flashover fires of interior origin.

BSR/NFPA 286-201x, Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth (revision of ANSI/NFPA 286-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard describes a method for determining the contribution of interior finish materials to room fire growth during specified fire exposure conditions. This method is intended for the evaluation of the flammability characteristics of wall and ceiling interior finish, where such materials constitute the exposed interior surfaces of buildings.

BSR/NFPA 350-201x, Guide for Safe Confined Space Entry and Work (revision of ANSI/NFPA 350-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This guide provides information to protect workers from confined space hazards.

BSR/NFPA 701-201x, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films (revision of ANSI/NFPA 701 -2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

Test Method 1. Test Method 1 shall apply to materials with an areal density less than or equal to 700 g/m2 (21 oz/yd^2), including the following: (1) Fabrics or other materials used in curtains, draperies, or other window treatments; (2) Single-layer fabrics; (3) Multilayer curtain and drapery assemblies in which the layers are fastened together by sewing or other means; and (4) Where required, fabrics with an areal density less than or equal to 700 g/m^2 (21 oz/yd^2) and used in other construction applications.

BSR/NFPA 900-201x, Building Energy Code (revision of ANSI/NFPA 900-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

These regulations shall control the minimum energy-efficient requirements for the following: (1) The design, construction, reconstruction, alteration, repair, demolition, removal, inspection, issuance, and revocation of permits or licenses, installation of equipment related to energy conservation in all buildings and structures and parts thereof; (2) The rehabilitation and maintenance of construction related to energy efficiency in existing buildings; and (3) The standards or requirements for materials to be used in connection therewith.

BSR/NFPA 914-201x, Code for the Protection of Historic Structures (revision of ANSI/NFPA 914-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This code describes principles and practices of protection and recovery for historic structures and districts. Collections within libraries, museums, and places of worship are not within the scope of this code.

BSR/NFPA 2400-201x, Standard for Small Unmanned Aircraft Systems (sUAS) Used for Public Safety Operations (revision of ANSI/NFPA 2400-2019)

Stakeholders: Manufacturer, User, Installer/Maintainer, Labor, Enforcing Authority, insurance, consumer, special experts, and research and testing.

Project Need: Public interest and need.

This standard shall cover the minimum requirements relating to the operation, deployment, and implementation of small unmanned aircraft systems (sUAS) for public safety operations. This standard shall establish operational protocols for public safety entities who use and support sUAS. This standard shall include minimum job performance requirements (JPRs) for public safety personnel who operate and support sUAS. This standard shall include minimum requirements for the maintenance of sUAS when used by public safety entities. This standard shall provide additional minimum requirements specific to public safety entities.

TAPPI (Technical Association of the Pulp and Paper Industry)

Contact: Deborah Dodson, (770) 209-7278, standards@tappi.org
15 Technology Parkway South, Suite 115, Peachtree Corners, GA 30092

Reaffirmation

BSR/TAPPI T 401 om-2015 (R201x), Fiber analysis of paper and paperboard (reaffirmation of ANSI/TAPPI T 401 om-2015)

Stakeholders: Manufacturers of pulp, paper, packaging, or related products; consumers or converters of such products; and suppliers of equipment, supplies, or raw materials for the manufacture of such products.

Project Need: To conduct required five-year review of an existing TAPPI/ANSI Standard.

This method provides a procedure for the identification of the kinds of fibers present in a sample of paper or paperboard and their quantitative estimation. This method requires the analyst be skillful and experienced in the field of pulp and paper microscopy. The analyst must make frequent use of standard samples of known fiber composition or of authentic fiber samples and must become thoroughly familiar with the appearance of the different fibers and their behavior when treated with the various stains. Morphological characteristics help identify special fibers such as straw, flax, esparto, soft woods, such as southern pine, Douglas fir, western hemlock, and various species of hardwoods, so that the correct weight factors may be applied. A knowledge of morphological characteristics of the different fibers is essential for their identification. More information on this subject is given in the Appendices. It is reported that fiber analysis in highly refined or secondary fiber sheets is very difficult to perform.

BSR/TAPPI T 563 om-2015 (R201x), Equivalent Black Area (EBA) and count of visible dirt in pulp, paper and paperboard by image analysis (reaffirmation of ANSI/TAPPI T 563 om-2015)

Stakeholders: Manufacturers of pulp, paper, packaging, or related products; consumers or converters of such products; and suppliers of equipment, supplies, or raw materials for the manufacture of such products.

Project Need: To conduct required five-year review of an existing TAPPI/ANSI Standard.

This method uses image analysis to determine the level of dirt in pulp, paper, and paperboard in terms of Equivalent Black Area (EBA) of dirt specks within the physical area range of 0.02 to 3.0 mm^2 reported in parts per million as well as the number of dirt specks per square meter of sample. Using the algorithm prescribed in this method, the maximum dirt size is limited to 3.0 mm^2. Extension to other speck sizes (for example those greater than 3.0 mm^2 in physical area), may require changes in equipment, calculation procedures, or both, and is not covered in this test method. This method cannot be used for physical area measurements since it does not correctly measure the dirt specks for that mode of measurement. The specimen to be evaluated should have a brightness, as determined by TAPPI T 452 “Brightness of Pulp, Paper, and Paperboard (Directional Reflectance at 457 nm),” of 30% or greater. It may be necessary to reform some pulp sheets into handsheets if the surface is too rough or textured. This method is an instrumental equivalent of TAPPI T 437 “Dirt in Paper and Paperboard” and TAPPI T 213 “Dirt in Pulp,” both of which report the equivalent black area of dirt in parts per million, and TAPPI T 537 “Dirt Count in Paper and Paperboard (Optical Character Recognition -- OCR)” which reports the number of specks of 0.02 mm^2 or larger per square meter. This method can be implemented using any image analysis system, provided that it meets the criteria specified in this standard. This method, and corresponding precision statement, was developed using laboratory analyzers and cannot be considered applicable to on-line systems.

BSR/TAPPI T 573 sp-2015 (R201x), Accelerated temperature aging of printing and writing paper by dry oven exposure apparatus (reaffirmation of ANSI/TAPPI T 573 sp-2015)

Stakeholders: Manufacturers of pulp, paper, packaging, or related products; consumers or converters of such products; and suppliers of equipment, supplies, or raw materials for the manufacture of such products.

Project Need: To conduct required five-year review of an existing TAPPI/ANSI Standard.

This standard practice describes a laboratory procedure for accelerating the aging of printing and writing paper within sealed glass tubes through exposure to elevated temperature within an oven. The standard practice applies to all types of printing and writing paper whether it is plain base paper, has internal additives, is coated, is printed, or contains any variants of printing and writing paper found in normal usage.

BSR/TAPPI T 650 om-2015 (R201x), Solids content of black liquor (reaffirmation of ANSI/TAPPI T 650 om-2015)

Stakeholders: Manufacturers of pulp, paper, packaging, or related products; consumers or converters of such products; and suppliers of equipment, supplies, or raw materials for the manufacture of such products.

Project Need: To conduct required five-year review of an existing TAPPI/ANSI Standard.

This method is designed to measure gravimetrically the solids content of weak and strong black liquors as they exist, or will exist, at the point of injection into the recovery furnace (1-3). This method can be used to calibrate rapid or routine control procedures. The method will measure the “solids” remaining after removal of water and other nonaqueous volatile materials normally lost in commercial evaporation systems. The sampling procedure is compatible with additional black liquor analytical procedures such as chemical analyses, heating value, etc.

American National Standards Maintained Under Continuous Maintenance

The ANSI Essential Requirements: Due Process Requirements for American National Standards provides two options for the maintenance of American National Standards (ANS): periodic maintenance (see clause 4.7.1) and continuous maintenance (see clause 4.7.2). Continuous maintenance is defined as follows:

The standard shall be maintained by an accredited standards developer. A documented program for periodic publication of revisions shall be established by the standards developer. Processing of these revisions shall be in accordance with these procedures. The published standard shall include a clear statement of the intent to consider requests for change and information on the submittal of such requests. Procedures shall be established for timely, documented consensus action on each request for change and no portion of the standard shall be excluded from the revision process. In the event that no revisions are issued for a period of four years, action to reaffirm or withdraw the standard shall be taken in accordance with the procedures contained in the ANSI Essential Requirements.

The Executive Standards Council (ExSC) has determined that for standards maintained under the Continuous Maintenance option, separate PINS announcements are not required. The following ANSI Accredited Standards Developers have formally registered standards under the Continuous Maintenance option

- **AAMI (Association for the Advancement of Medical Instrumentation)**
- **AARST (American Association of Radon Scientists and Technologists)**
- **AGA (American Gas Association)**
- **AGSC-AGRSS (Auto Glass Safety Council)**
- **ASC X9 (Accredited Standards Committee X9, Incorporated)**
- **ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.)**
- **ASME (American Society of Mechanical Engineers)**
- **ASTM (ASTM International)**
- **GBI (Green Building Initiative)**
- **HL7 (Health Level Seven)**
- **IES (Illuminating Engineering Society)**
- **ITI (InterNational Committee for Information Technology Standards)**
- **MHI (Material Handling Industry)**
- **NAHBRC (NAHB Research Center, Inc.)**
- **NBBPVI (National Board of Boiler and Pressure Vessel Inspectors)**
- **NCPDP (National Council for Prescription Drug Programs)**
- **NEMA (National Electrical Manufacturers Association)**
- **NISO (National Information Standards Organization)**
- **NSF (NSF International)**
- **PRCA (Professional Ropes Course Association)**
- **RESNET (Residential Energy Services Network, Inc.)**
- **SAE (SAE International)**
- **TCNA (Tile Council of North America)**
- **TIA (Telecommunications Industry Association)**
- **UL (Underwriters Laboratories, Inc.)**

To obtain additional information with regard to these standards, including contact information at the ANSI Accredited Standards Developer, please visit ANSI Online at www.ansi.org/asd, select “Standards Activities,” click on “Public Review and Comment” and “American National Standards Maintained Under Continuous Maintenance.” This information is also available directly at www.ansi.org/publicreview

Alternatively, you may contact the Procedures & Standards Administration department (PSA) at psa@ansi.org or via fax at 212-840-2298. If you request that information be provided via E-mail, please include your E-mail address; if you request that information be provided via fax, please include your fax number. Thank you.

ANSI-Accredited Standards Developers Contact Information

The addresses listed in this section are to be used in conjunction with standards listed in PINS, Call for Comment and Final Actions. This section is a list of developers who have submitted standards for this issue of *Standards Action* – it is not intended to be a list of all ANSI-Accredited Standards Developers. Please send all address corrections to Standards Action Editor at standact@ansi.org.

AAFS
American Academy of Forensic Sciences
410 North 21st Street
Colorado Springs, CO 80904
Phone: (719) 453-1036
Web: www.aafs.org

AAMI
Association for the Advancement of Medical Instrumentation
Phone: (703) 647-2786
Web: www.aami.org

AGMA
American Gear Manufacturers Association
1001 N Fairfax Street, 5th Floor
Alexandria, VA 22314-1587
Phone: (703) 684-0211
Web: www.agma.org

AISI
American Iron and Steel Institute
25 Massachusetts Avenue, NW
Suite 800
Washington, DC 20001
Phone: (202) 452-7100
Web: www.steel.org

AMCA
Air Movement and Control Association
30 West University Drive
Arlington Heights, IL 60004-1893
Phone: (847) 704-6285
Web: www.amca.org

ANS
American Nuclear Society
555 North Kensington Avenue
La Grange Park, IL 60526
Phone: (708) 579-8268
Web: www.ans.org

API
American Petroleum Institute
1220 L Street, NW
Washington, DC 20005-4070
Phone: (202) 682-8056
Web: www.api.org

ASA (ASC S2)
Acoustical Society of America
1305 Walt Whitman Road
Suite 300
Melville, NY 11747
Phone: (631) 390-0215
Web: www.acousticalsociety.org

ASA (ASC S3)
Acoustical Society of America
1305 Walt Whitman Road
Suite 300
Melville, NY 11747
Phone: (631) 390-0215
Web: www.acousticalsociety.org

ASHRAE
American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329-2305
Phone: (678) 539-1125
Web: www.ashrae.org

ASME
American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990
Phone: (212) 591-8521
Web: www.asme.org

ASTM
ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Phone: (610) 832-9696
Web: www.astm.org

AWWA
American Water Works Association
6666 W. Quincy Ave.
Denver, CO 80235
Phone: (303) 347-6178
Web: www.awwa.org

BHCOE
Behavioral Health Center of Excellence
7083 Hollywood Boulevard
#565
Los Angeles, CA 90028
Phone: (310) 627-2746
Web: www.bhcoe.org

ECIA
Electronic Components Industry Association
13873 Park Center Road
Suite 315
Herndon, VA 20171
Phone: (571) 323-0294
Web: www.ecianow.org

EOS/ESD
ESD Association, Inc.
7900 Turin Rd., Bldg. 3
Rome, NY 13440
Phone: (315) 339-6937
Web: www.esda.org

GTESS
Georgia Tech Energy & Sustainability Services
75 Fifth Street N.W
Suite 300
Atlanta, GA 30332-0640
Phone: (404) 558-5948
Web: www.innovate.gatech.edu

IAPMO (ASSE Chapter)
ASSE International Chapter of IAPMO
18927 Hickory Creek Drive
Suite 220
Mokena, IL 60448
Phone: (708) 995-3015
Web: www.asse-plumbing.org

IEST
Institute of Environmental Sciences and Technology
1827 Walden Office Square
Suite 400
Schaumburg, IL 60173
Phone: (847) 981-0100
Web: www.iest.org

INMM (ASC N14)
Institute of Nuclear Materials Management
P.O. Box 2008, MS 6495
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6495
Phone: (209) 627-5473
Web: www.inmm.org

ITI (INCITS)
InterNational Committee for Information Technology Standards
1101 K Street NW
Suite 610
Washington, DC 20005-3922
Phone: (202) 737-8888
Web: www.incits.org

NEBB
National Environmental Balancing Bureau
8575 Grovemont Circle
Gaithersburg, MD 20877
Phone: (301) 591-0492
Web: www.nebb.org

NEMA (ASC C136)
National Electrical Manufacturers Association
1300 North 17th Street
Suite 900
Rosslyn, VA 22209
Phone: (703) 841-3234
Web: www.nema.org

NEMA (Canvass)
National Electrical Manufacturers Association
1300 N 17th St
Rosslyn, VA 22209
Phone: (703) 841-3285
Web: www.nema.org

NFPA
National Fire Protection Association
One Batterymarch Park
Quincy, MA 02169
Phone: (617) 984-7246
Web: www.nfpa.org

NSF
NSF International

789 N. Dixboro Road
Ann Arbor, MI 48105-9723
Phone: (734) 827-5643

Web: www.nsf.org

SAIA (ASC A11)
Scaffold & Access Industry Association

400 Admiral Boulevard
Kansas City, MO 64106
Phone: (816) 595-4860

Web: www.saiaonline.org

SCTE
Society of Cable Telecommunications Engineers

140 Philips Road
Exton, PA 19341-1318
Phone: (484) 252-2330

Web: www.scte.org

TAPPI
Technical Association of the Pulp and Paper Industry

15 Technology Parkway South
Suite 115
Peachtree Corners, GA 30092
Phone: (770) 209-7278

Web: www.tappi.org

UL
Underwriters Laboratories, Inc.

12 Laboratory Dr.
Research Triangle Park, NC 27709
Phone: (919) 549-1479

Web: www.ul.com

ISO & IEC Draft International Standards

This section lists proposed standards that the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) are considering for approval. The proposals have received substantial support within the technical committees or subcommittees that developed them and are now being circulated to ISO and IEC members for comment and vote. Standards Action readers interested in reviewing and commenting on these documents should order copies from ANSI.

Comments

Comments regarding ISO documents should be sent to ANSI's ISO Team (isot@ansi.org); comments on ISO documents must be submitted electronically in the approved ISO template and as a Word document as other formats will not be accepted.

Those regarding IEC documents should be sent to Tony Zertuche, General Secretary, USNC/IEC, at ANSI's New York offices (tzertuche@ansi.org). The final date for offering comments is listed after each draft.

Ordering Instructions

ISO and IEC Drafts can be made available by contacting ANSI's Customer Service department. Please e-mail your request for an ISO or IEC Draft to Customer Service at sales@ansi.org. When making your request, please provide the date of the Standards Action issue in which the draft document you are requesting appears.

ISO Standards

ACOUSTICS (TC 43)

ISO/DIS 23351-1, Acoustics - Measurement of speech level reduction of furniture ensembles and enclosures - Part 1: Laboratory method - 7/14/2019, $67.00

AIR QUALITY (TC 146)

ISO/DIS 15202-1, Workplace air - Determination of metals and metalloids in airborne particulate matter by inductively coupled plasma atomic emission spectrometry - Part 1: Sampling - 7/20/2019, $71.00

ISO/DIS 15202-2, Workplace air - Determination of metals and metalloids in airborne particulate matter by inductively coupled plasma atomic emission spectrometry - Part 2: Sample preparation - 7/20/2019, $119.00

DENTISTRY (TC 106)

ISO/DIS 9997, Dentistry - Cartridge syringes - 5/27/2019, $53.00

ISO/DIS 20888, Dentistry - Terminology for forensic oro-dental data - 5/27/2019, $125.00

ENERGY MANAGEMENT AND ENERGY SAVINGS (TC 301)

ISO/DIS 50049, Calculation methods for energy efficiency and energy consumption variations at country, region and city levels: relation to energy savings and other factors - 5/26/2019, $125.00

FERROUS METAL PIPES AND METALLIC FITTINGS (TC 5)

ISO/DIS 21051, Construction and installation of ductile iron pipeline system - 7/12/2019, $107.00

FIRE SAFETY (TC 92)

ISO/DIS 23693-1, Determination of the resistance to gas explosions of passive fire protection materials - Part 1: General Requirements - 7/14/2019, $40.00

GAS CYLINDERS (TC 58)

ISO/DIS 11114-1, Gas cylinders - Compatibility of cylinder and valve materials with gas content - Part 1: Metallic materials - 5/24/2019, $119.00

GEOGRAPHIC INFORMATION/GEOMATICS (TC 211)

ISO/DIS 19131, Geographic information - Data product specifications - 5/24/2019, $134.00

HEALTH INFORMATICS (TC 215)

ISO/DIS 17115, Health informatics - Representation of categorial structures of terminology (CatStructure) - 7/20/2019, $58.00

MINING (TC 82)

ISO/DIS 22932-1, Mining - Terminology - Part 1: Planning and surveying - 5/27/2019, $146.00

PETROLEUM PRODUCTS AND LUBRICANTS (TC 28)

ISO/DIS 23572, Petroleum products - Lubricating greases - Sampling of greases - 7/20/2019, $40.00

PLASTICS (TC 61)

ISO/DIS 844, Rigid cellular plastics - Determination of compression properties - 7/19/2019, $62.00

ISO/DIS 21368, Adhesives - Guidelines for the fabrication of adhesively bonded structures and reporting procedures suitable for the risk evaluation of such structures - 7/19/2019, $175.00

ISO/DIS 22636, Adhesives - Adhesives for floor coverings - Requirements for mechanical and electrical performance - 7/20/2019, $40.00

RISK MANAGEMENT (TC 262)

ISO/DIS 31022, Risk management - Guidelines for the management of legal risk - 5/23/2019, $112.00

ROAD VEHICLES (TC 22)

ISO/DIS 20794-2, Road vehicles - Clock extension peripheral interface (CXPI) - Part 2: Application layer - 5/24/2019, $107.00

ISO/DIS 20794-2, Road vehicles - Clock extension peripheral interface (CXPI) - Part 2: Application layer - 5/24/2019, $107.00

ISO/DIS 20794-3, Road vehicles - Clock extension peripheral interface (CXPI) - Part 3: Transport and network layer - 5/24/2019, $82.00

ISO/DIS 20794-4, Road vehicles - Clock extension peripheral interface (CXPI) - Part 4: Data link layer and physical layer - 5/24/2019, $125.00

ROUND STEEL LINK CHAINS, CHAIN SLINGS, COMPONENTS AND ACCESSORIES (TC 111)

ISO/DIS 2415, Forged shackles for general lifting purposes - Dee shackles and bow shackles - 7/21/2019, $88.00

RUBBER AND RUBBER PRODUCTS (TC 45)

ISO/DIS 8789, Rubber hoses and hose assemblies for liquefied petroleum gas in motor vehicles - Specification - 5/24/2019, $58.00

SECURITY (TC 292)

ISO/DIS 22392, Security and resilience - Community resilience - Guidelines for conducting peer reviews - 5/25/2019, $102.00

STEEL (TC 17)

ISO/DIS 6934-4, Steel for the prestressing of concrete - Part 4: Strand - 7/21/2019, $40.00

SUSTAINABLE DEVELOPMENT IN COMMUNITIES (TC 268)

ISO/DIS 37160, Smart community infrastructure - Measurement methods for quality of thermal power station infrastructure and requirements for plant operations and management - 5/24/2019, $71.00

TECHNICAL DRAWINGS, PRODUCT DEFINITION AND RELATED DOCUMENTATION (TC 10)

ISO/DIS 128-100, Technical product documentation - General principles of representation - Part 100: Index - 7/14/2019, $53.00

TERMINOLOGY (PRINCIPLES AND COORDINATION) (TC 37)

ISO/DIS 24617-7, Language resource management - Semantic annotation framework - Part 7: Spatial information - 7/14/2019, $112.00

TRANSPORT INFORMATION AND CONTROL SYSTEMS (TC 204)

ISO/DIS 21202, Intelligent transport systems - Partially automated lane change systems (PALS) - Functional/operational requirements and test procedures - 7/19/2019, $58.00

ISO/DIS 22078, Intelligent transport systems - Bicyclist detection and collision mitigation systems (BDCMS) - Performance requirements and test procedures - 7/19/2019, $88.00

ISO/DIS 13185-4, Intelligent transport systems (ITS) - Vehicle interface for provisioning and support of ITS Services - Part 4: Unified vehicle interface protocol (UVIP) conformance test specification - 7/20/2019, $119.00

ISO/IEC JTC 1, Information Technology

ISO/IEC DIS 23396, Systems and software engineering - Capabilities of review tools - 7/13/2019, $93.00

ISO/IEC DIS 20085-2, Information technology - IT Security techniques Test tool requirements and test tool calibration methods for use in testing noninvasive attack mitigation techniques in cryptographic modules - Part 2: Test calibration methods and apparatus - 7/19/2019, $67.00

IEC Standards

15/881/CDV, IEC 60455-3-8 ED2: Resin based reactive compounds used for electrical insulation - Part 3: Specifications for individual materials - Sheet 8: Resins for cable accessories, 2019/7/26

22/306/DTR, IEC TR 60146-1-2 ED5: Semiconductor converters - General requirements and line commutated converters - Part 1-2: Application guide, 2019/6/28

23H/448/DTS, IEC TS 62196-3-1 ED1: Plugs,socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 3-1: Vehicle connector, vehicle inlet and cable assembly for DC charging intended to be used with a thermal management system, 2019/7/26

34B/2037A/FDIS, IEC 60061-3/AMD56 ED3: Amendment 56 - Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 3: Gauges, 2019/5/31

40/2673/CD, IEC 60384-2 ED5: Fixed capacitors for use in electronic equipment - Part 2: Sectional specification - Fixed metallized polyethylene terephthalate film dielectric d.c. capacitors, 2019/7/26

44/848A/NP, PNW TS 44-848: Safety of machinery - Electro-sensitive protective equipment - Part 5: Particular requirements for radar-based protective devices, 2019/6/21

47/2555/CDV, IEC 62435-7 ED1: Long-term storage of electronic components - Part 7: Micro-electromechanical devices, 2019/7/26

64/2374/CD, IEC 60364-5-55/AMD3 ED2: Electrical installations of buildings - Part 5-55: Selection and erection of electrical equipment - Other equipment; Amendment on Clause 551, 2019/6/28

64/2370/CDV, IEC 60364-5-54/AMD1 ED3: Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors, 2019/7/26

69/655/CD, IEC 61980-1 ED2: Electric vehicle wireless power transfer (WPT) systems - Part 1: General requirements, 2019/7/26

80/927/FDIS, IEC 61097-6/AMD2 ED2: Global maritime distress and safety system (GMDSS) - Part 6: Narrowband direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (NAVTEX), 2019/6/14

80/928/FDIS, IEC 61097-16 ED1: Global Maritime Distress and Safety System (GMDSS) - Part 16: Ship earth stations operating in mobile-satellite systems recognized for use in the GMDSS - Operational and performance requirements, methods of testing and required test results, 2019/6/14

86C/1597/DTR, IEC TR 61292-3 ED2: Optical amplifiers - Design guides - Part 3: Classification, characteristics and applications, 2019/6/28

107/355/DTR, IEC TR 62396-8 ED1: Process management for avionics - Atmospheric radiation effects - Part 8: Awareness guide related to proton, electron, pion, muon fluxes and single event effects in avionics electronic equipment., 2019/6/28

119/262/CDV, IEC 62899-201-2 ED1: Printed electronics - Part 201-2: Materials - Evaluation method of stretchable substrates, 2019/7/26

SyCSmartCities/93/CD, IEC TS 63188 ED1: Systems Reference Document - Smart Cities - Smart Cities Reference Architecture Methodology (SCRAM), 2019/6/28

SyCSmartEnergy/105/DTS, IEC TS 62559-4 ED1: Use Case methodology - Part 4: Best Practices in Use Case Development for IEC standardization processes and some examples for application outside standardization, 2019/7/26

Newly Published ISO & IEC Standards

Listed here are new and revised standards recently approved and promulgated by ISO - the International Organization for Standardization – and IEC – the International Electrotechnical Commission. Most are available at the ANSI Electronic Standards Store (ESS) at www.ansi.org. All paper copies are available from Standards resellers (http://webstore.ansi.org/faq.aspx#resellers)..

ISO Standards

AIRCRAFT AND SPACE VEHICLES (TC 20)

ISO 11231:2019, Space systems - Probabilistic risk assessment (PRA), $138.00

CAST IRON AND PIG IRON (TC 25)

ISO 945-4:2019, Microstructure of cast irons - Part 4: Test method for evaluating nodularity in spheroidal graphite cast irons, $162.00

FREIGHT CONTAINERS (TC 104)

ISO 1496-3:2019, Series 1 freight containers - Specification and testing - Part 3: Tank containers for liquids, gases and pressurized dry bulk, $138.00

INDUSTRIAL AUTOMATION SYSTEMS AND INTEGRATION (TC 184)

ISO 20140-3:2019, Automation systems and integration - Evaluating energy efficiency and other factors of manufacturing systems that influence the environment - Part 3: Environmental performance evaluation data aggregation process, $68.00

JEWELLERY (TC 174)

ISO 9202:2019, Jewellery and precious metals - Fineness of precious metal alloys, $45.00

PAINTS AND VARNISHES (TC 35)

ISO 22970:2019, Paints and varnishes - Test method for evaluation of adhesion of elastic adhesives on coatings by peel test, peel strength test and tensile lap-shear strength test with additional stress by condensation test or cataplasm storage, $138.00

PAPER, BOARD AND PULPS (TC 6)

ISO 12625-1:2019, Tissue paper and tissue products - Part 1: Vocabulary, $45.00

PIGMENTS, DYESTUFFS AND EXTENDERS (TC 256)

ISO 18451-1:2019, Pigments, dyestuffs and extenders - Terminology - Part 1: General terms, $45.00

PLASTICS (TC 61)

ISO 15509:2019, Adhesives - Determination of the bond strength of engineering-plastic joints, $68.00

ISO 15512:2019, Plastics - Determination of water content, $162.00

ISO 17556:2019, Plastics - Determination of the ultimate aerobic biodegradability of plastic materials in soil by measuring the oxygen demand in a respirometer or the amount of carbon dioxide evolved, $138.00

ISO 6721-1:2019, Plastics - Determination of dynamic mechanical properties - Part 1: General principles, $138.00

ISO 6721-2:2019, Plastics - Determination of dynamic mechanical properties - Part 2: Torsion-pendulum method, $103.00

ISO 6721-4:2019, Plastics - Determination of dynamic mechanical properties - Part 4: Tensile vibration - Non-resonance method, $68.00

PULLEYS AND BELTS (INCLUDING VEEBELTS) (TC 41)

ISO 21342:2019, Synchronous belt drives - Automotive belts and pulleys, $138.00

ROAD VEHICLES (TC 22)

ISO 11992-1:2019, Road vehicles - Interchange of digital information on electrical connections between towing and towed vehicles - Part 1: Physical and data-link layers, $138.00

ISO 20078-3:2019, Road vehicles - Extended vehicle (ExVe) web services - Part 3: Security, $103.00

ISO 20766-9:2019, Road vehicles - Liquefied petroleum gas (LPG) fuel systems components - Part 9: Pressure relieve device (PRD), $68.00

SAFETY OF TOYS (TC 181)

ISO 8124-10:2019, Safety of toys - Part 10: Experimental sets for chemistry and related activities, $138.00

ISO 8124-11:2019, Safety of toys - Part 11: Chemical toys (sets) other than experimental sets, $209.00

SHIPS AND MARINE TECHNOLOGY (TC 8)

ISO 21132:2019, Ships and marine technology - Marine cranes - Operation and maintenance requirements, $45.00

SPORTS AND RECREATIONAL EQUIPMENT (TC 83)

ISO 9523:2019, Touring ski-boots for adults - Interface with touring ski-bindings - Requirements and test methods, $138.00

WATER QUALITY (TC 147)

ISO 9698:2019, Water quality - Tritium - Test method using liquid scintillation counting, $138.00

WELDING AND ALLIED PROCESSES (TC 44)

ISO 5171:2019, Gas welding equipment - Pressure gauges used in welding, cutting and allied processes, $103.00

ISO/IEC JTC 1, Information Technology

ISO/IEC 18033-6:2019, IT Security techniques - Encryption algorithms - Part 6: Homomorphic encryption, $103.00

ISO/IEC 21122-1:2019, Information technology - JPEG XS low-latency lightweight image coding system - Part 1: Core coding system, $209.00

IEC Standards

CABLES, WIRES, WAVEGUIDES, R.F. CONNECTORS, AND ACCESSORIES FOR COMMUNICATION AND SIGNALLING (TC 46)

IEC 61156-11 Ed. 1.0 en:2019, Multicore and symmetrical pair/quad cables for digital communications - Part 11: Symmetrical single pair cables with transmission characteristics up to 600 MHz - Horizontal floor wiring - Sectional specification, $164.00

CAPACITORS AND RESISTORS FOR ELECTRONIC EQUIPMENT (TC 40)

IEC 62812 Ed. 1.0 b:2019, Low resistance measurements - Methods and guidance, $281.00

ELECTRICAL INSTALLATIONS FOR THE LIGHTING AND BEACONING OF AERODROMES (TC 97)

IEC 61820-1 Ed. 1.0 b:2019, Electrical installations for aeronautical ground lighting at aerodromes - Part 1: Fundamental principles, $117.00

FIBRE OPTICS (TC 86)

IEC 62148-19 Ed. 1.0 b:2019, Fibre optic active components and devices - Package and interface standards - Part 19: Photonic chip scale package, $235.00

LAMPS AND RELATED EQUIPMENT (TC 34)

IEC 63146 Ed. 1.0 b:2019, LED packages for general lighting - Specification sheet, $47.00

PIEZOELECTRIC AND DIELECTRIC DEVICES FOR FREQUENCY CONTROL AND SELECTION (TC 49)

IEC 62884-4 Ed. 1.0 b:2019, Measurement techniques of piezoelectric, dielectric and electrostatic oscillators - Part 4: Short-term frequency stability test methods, $117.00

ROTATING MACHINERY (TC 2)

IEC/SRD 60034-2-3 Ed. 1.0 b:2013, Rotating electrical machines - Part 2-3: Specific test methods for determining losses and efficiency of converter-fed AC induction motors, $164.00

SEMICONDUCTOR DEVICES (TC 47)

IEC 62951-6 Ed. 1.0 b:2019, Semiconductor devices - Flexible and stretchable semiconductor devices - Part 6: Test method for sheet resistance of flexible conducting films, $164.00

SURFACE MOUNTING TECHNOLOGY (TC 91)

IEC 61188-6-4 Ed. 1.0 b:2019, Printed boards and printed board assemblies - Design and use - Part 6-4: Land pattern design - Generic requirements for dimensional drawings of surface mounted components (SMD) from the viewpoint of land pattern design, $281.00

IEC Technical Reports

SAFETY OF MACHINERY - ELECTROTECHNICAL ASPECTS (TC 44)

IEC/TR 63074 Ed. 1.0 en:2019, Safety of machinery - Security aspects related to functional safety of safety-related control systems, $164.00

IEC Technical Specifications

SAFETY OF MACHINERY - ELECTROTECHNICAL ASPECTS (TC 44)

IEC/TS 62998-1 Ed. 1.0 en:2019, Safety of machinery - Safety-related sensors used for the protection of persons, $375.00

Registration of Organization Names in the United States

The Procedures for Registration of Organization Names in the United States of America (document ISSB 989) require that alphanumeric organization names be subject to a 90-day Public Review period prior to registration. For further information, please contact the Registration Coordinator at (212) 642-4975.

The following is a list of alphanumeric organization names that have been submitted to ANSI for registration. Alphanumeric names appearing for the first time are printed in bold type. Names with confidential contact information, as requested by the organization, list only public review dates.

PUBLIC REVIEW

BDAP

Public Review: March 29, 2019 to June 29, 2019

NOTE: Challenged alphanumeric names are underlined. The Procedures for Registration provide for a challenge process, which follows in brief. For complete details, see Section 6.4 of the Procedures.

A challenge is initiated when a letter from an interested entity is received by the Registration Coordinator. The letter shall identify the alphanumeric organization name being challenged and state the rationale supporting the challenge. A challenge fee shall accompany the letter. After receipt of the challenge, the alphanumeric organization name shall be marked as challenged in the Public Review list. The Registration Coordinator shall take no further action to register the challenged name until the challenge is resolved among the disputing parties.

Proposed Foreign Government Regulations

Call for Comment

U.S. manufacturers, exporters, regulatory agencies and standards developing organizations may be interested in proposed foreign technical regulations notified by Member countries of the World Trade Organization (WTO). In accordance with the WTO Agreement on Technical Barriers to Trade (TBT Agreement), Members are required to notify proposed technical regulations that may significantly affect trade to the WTO Secretariat in Geneva, Switzerland. In turn, the Secretariat issues and makes available these notifications. The purpose of the notification requirement is to provide global trading partners with an opportunity to review and comment on the regulations before they become final.

The USA Inquiry Point for the WTO TBT Agreement is located at the National Institute of Standards and Technology (NIST) in the Standards Coordination Office (SCO). The Inquiry Point distributes the notified proposed foreign technical regulations (notifications) and makes the associated full-texts available to U.S. stakeholders via its online service, Notify U.S. Interested U.S. parties can register with Notify U.S. to receive e-mail alerts when notifications are added from countries and industry sectors of interest to them.

To register for Notify U.S., please visit http://www.nist.gov/notifyus/.

The USA WTO TBT Inquiry Point is the official channel for distributing U.S. comments to the network of WTO TBT Enquiry Points around the world. U.S. business contacts interested in commenting on the notifications are asked to review the comment guidance available on Notify U.S. at https://tsapps.nist.gov/notifyus/data/guidance/guidance.cfm prior to submitting comments.

For further information about the USA TBT Inquiry Point, please visit: https://www.nist.gov/standardsgov/what-we-do/trade-regulatory-programs/usa-wto-tbt-inquiry-point

Contact the USA TBT Inquiry Point at:(301) 975-2918; Fax: (301) 926-1559; E-mail: usatbtep@nist.gov or notifyus@nist.gov.

Information Concerning

American National Standards

Call for Members

INCITS Executive Board – ANSI Accredited SDO and US TAG to ISO/IEC JTC 1, Information Technology

The InterNational Committee for Information Technology Standards (INCITS), an ANSI accredited SDO, is the forum of choice for information technology developers, producers and users for the creation and maintenance of formal de jure IT standards. INCITS' mission is to promote the effective use of Information and Communication Technology through standardization in a way that balances the interests of all stakeholders and increases the global competitiveness of the member organizations.

The INCITS Executive Board serves as the consensus body with oversight of its 40+ Technical Committees. Additionally, the INCITS Executive Board has the international leadership role as the US Technical Advisory Group (TAG) to ISO/IEC JTC 1, Information Technology.

Membership in the INCITS Executive Board is open to all directly and materially affected parties in accordance with INCITS membership rules. To find out more about participating on the INCITS Executive Board, contact Jennifer Garner at jgarner@itic.org or visit http://www.incits.org/participation/membership-info for more information.

Membership in all interest categories is always welcome; however, the INCITS Executive Board seeks to broaden its membership base in the following categories:

- Service Providers
- Users
- Standards Development Organizations and Consortia
- Academic Institutions

Society of Cable Telecommunications

ANSI Accredited Standards Developer

SCTE, an ANSI-accredited SDO, is the primary organization for the creation and maintenance of standards for the cable telecommunications industry. SCTE's standards mission is to develop standards that meet the needs of cable system operators, content providers, network and customer premises equipment manufacturers, and all others who have an interest in the industry through a fair, balanced and transparent process.

SCTE is currently seeking to broaden the membership base of its consensus bodies and is interested in new members in all membership categories to participate in new work in fiber-optic networks, advanced advertising, 3D television, and other important topics. Of particular interest is membership from the content (program and advertising) provider and user communities.

Membership in the SCTE Standards Program is open to all directly a materially affected parties as defined in SCTE's membership rules and operating procedures. More information is available at www.scte.org or by e-mail from standards@scte.org.

Public Notice of the Approval of a Provisional Amendment by The Association of Electrical Equipment and Medical Imaging Manufacturers (NEMA) in accordance with ANNEX B of ANSI Essential Requirements www.ansi.org/essentialrequirements)

NEMA announces the May 3, 2019 approval of a Provisional Amendment to ANSI/NEMA WC55021-2013. The amended standard will be: ANSI/NEMA WC 55021-2013 (PA 2019), Standard for Military Internal Electrical Cable

Questions may be directed to:
Gerard.Winstanley@Nema.org.

Opportunity – Proposed ASSP Technical Report: Guidance for the Sizing, Fit, Selection, and Use of Personal Protective Equipment and Apparel Marketed to Women

Application Deadline: June 3, 2019

The American Society of Safety Professionals (ASSP) is developing a Women's PPE Technical Report, which will be eventually be registered with the American National Standards Institute (ANSI). This Technical Report is intended for use by women in occupational safety and health settings. This guidance addresses fit issues, selection, assessment, and use of such equipment. Through the application of the guidance in this technical report, occupational safety and health hazards, risks, and exposures related to PPE issues can be identified, avoided, reduced, and/or eliminated. This report does not include design specifications or fashion related issues. There is a strong belief that PPE and apparel marketed to women does not meet the diverse needs of women in the workplace and PPE Remediation for woman has been rooted in perception. The "shrink and pink" approach to PPE and apparel does nothing to address fit and function for women who need the garments and gear to do their work safely. This outdated approach has left many women with ill-fitting gear that does not adequately protect them.

ASSP will be using the canvass method to develop evidence of consensus for the approval of this technical report. This notice will serve to inform potential canvassees about the use of the canvass process for developing evidence of consensus, and, if the potential canvassees are interested in participating, obtains an appropriate interest category classification. With the canvass method, a ballot will provide an opportunity for the canvassee to indicate its position (i.e., approval, objection (with reasons), abstention (with comment), or non-participation), with the advice that, in order to receive consideration, objections must be accompanied by supporting written reasons and, where possible, proposals for a solution to the problem raised.

ASSP shall develop a list of potential canvassees consisting of those persons (organizations, companies, government agencies, standards developers, individuals, etc.) known to be, or who have indicated that they are, directly and materially affected by the standard. If you fulfill that requirement and are interested in being a canvassee for ASSP's Women's PPE Technical Report, submit your application to ASSP by June 3, 2019. Request an application at LBauerschmidt@assp.org.

ANSI Accredited Standards Developers

Approval of Reaccreditation

Certified Automotive Parts Association (CAPA)

The reaccreditation of the Certified Automotive Parts Association (CAPA), an ANSI member and Accredited Standards Developer (ASD), has been approved at the direction of ANSI's Executive Standards Council, under its recently revised operating procedures for documenting consensus on CAPA-sponsored American National Standards, effective May 3, 2019. For additional information, please contact: Ms. Bernadette Kronberg, Program Manager, Transportation Technologies, Certified Automotive Parts Association, c/o Intertek, 4700 Broadmoor SE, Suite 200, Kentwood, MI 49512; phone: 616.656.7483; e-mail: bernadette.kronberg@intertek.com.

Reaccreditation

ASC B109, Gas Displacement Meters

Comment Deadline: June 10, 2019

ASC B109, Gas Displacement Meters has submitted revisions to its currently accredited operating procedures for documenting consensus on ASC B109-sponsored American National Standards, under which it was last reaccredited in 2016. As the revisions appear to be substantive in nature, the reaccreditation process is initiated.

To obtain a copy of the revised procedures or to offer comments, please contact the Secretariat of ASC B109: Mr. Jeffrey Meyers, Director, Operations and Engineering Services, P.E., American Gas Association, 400 N. Capitol Street, NW, Washington, DC 20001; phone: 202.824.7333; e-mail: JMeyers@aga.org. You may view/download a copy of the revisions during the public review period at the following URL: www.ansi.org/accredPR Please submit any public comments on the revised procedures to AGA by June 10, 2019, with a copy to the ExSC Recording Secretary in ANSI's New York Office (e-mail: Jthompso@ANSI.org).

Withdrawal of ASD Accreditation

University of Texas Medical Branch (UTMB)

The University of Texas Medical Branch (UTMB) has requested the formal withdrawal of its ANSI accreditation as a developer of American National Standards (ANS). UTMB currently maintains no ANS.

This action is taken, effective May 2, 2019. For additional information, please contact: Dr. Ronald B. McKinley, PhD, MBA, SPHR, Vice-President and Chief Standards Officer, The University of Texas Medical Branch – Healthcare Management Institute, 301 University Boulevard, Galveston, TX 77555-0973; phone: 409.772.0880; e-mail: rbmckinl@utmb.edu.

International Organization for Standardization (ISO)

ISO Proposal for a New Field of ISO Technical Activity

Human Phenome

Comment Deadline: May 31, 2019

SAC, the ISO member body for China, has submitted to ISO a proposal for a new field of ISO technical activity on Human Phenome, with the following scope statement:

> Standardization in the field of human phenome.
>
> Note. Human phenome is defined at the complete set of all human characteristics. It is determined by the interaction between genes and environment. It includes many characteristics ranging from macro- to micro-scales, from external appearance to internal functions, from biochemical characteristics to psychological behavior, etc.
>
> Excluded: the fields covered by ISO/TC276 (Biotechnology), ISO/TC215 (Health Information), ISO/IEC JTC1/SC37 (Biometrics), ISO/IEC JTC 1/SC 29 (Coding of audio, picture, multimedia and hypermedia information) and ISO/TC249 (Traditional Chinese Medicine).

Anyone wishing to review the proposal can request a copy by contacting ANSI's ISO Team (isot@ansi.org), with a submission of comments to Steve Cornish (scornish@ansi.org) by close of business on Friday, May 31, 2019.

U.S. Technical Advisory Group

Application for Accreditation

U.S. Technical Advisory Group (TAG) to ISO TC 324 – Sharing Economy

Comment Deadline: June 10, 2019

In accordance with clause 2.4 of the ANSI International Procedures, the American National Standards Institute (with funding support from OASIS) has submitted an application for accreditation for a proposed U.S. Technical Advisory Group (TAG) to ISO TC 324, Sharing Economy and a request for approval as TAG Administrator. The proposed TAG will operate using the Model Operating Procedures for U.S. Technical Advisory Groups to ANSI for ISO Activities as contained in Annex A of the ANSI International Procedures. To obtain a copy of the TAG application or to offer comments, please contact: Mr. Jason Knopes, Senior Manager of ISO Outreach and Enhanced Services, ANSI, 25 West 43rd Street, 4th Floor, New York, NY 10036; phone: 212.642.4886; e-mail: jknopes@ansi.org (please copy jthompso@ansi.org). Please submit your comments by June 10, 2019.

BSR/ASHRAE/IES Addendum be
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum be to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Third Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This is the original foreword from the full second public review and is included for reference and background.

This addendum updates the efficiency requirements for Computer Room air conditioners as listed in table 6.8.1-11and adds a new table 6.8.1-19. The following changes are being made.

- The current products listed in table 6.8.1-11 are for floor mounted computer room units and this is being clarified as part of the addendum change. The efficiencies are being updated to better align with the industry levels and are in most product classes increasing in the order of 3-5%. A quick check of the cost effectiveness shows that payback periods are in the order of 2-3 years and well below what the scalar limit of 10 for a 15 year life so the change is cost effective.
- The second change that is being made is to add a new table 6.8-1-19 which covers small ceiling mounted computer room units. This is a new table and reflects current industry products and is being added to cover these products in the standard. As it is current products no cost justification has been done.

Both these changes were developed by the AHRI Datacom Cooling Section and was agreed to and approved by the industry.

Third Public Review ISC

In reviewing the final draft for publication it was noted that the rating conditions for the return air were listed as dry bulb and wet bulb which is the typical method used for this, but the AHRI 1360 rating standard and the current ASHRAE 90.1 table 6.8.1-11 uses dry bulb and dew point so this ISC is being released to cover the change from wet bulb to dew point in table 6.8.1-11 and 6.8.1-19 in both the IP and SI versions.

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum BE to 90.1-2016

For the third public review ISC make the following changes to the revised IP table 6.8.1-11

Table 6.8.1-11 Floor Mounted Air Conditioners and *Condensing Units* Serving *Computer Rooms*—Minimum *Efficiency* Requirements

Equipment Type	Standard Model	Net Sensible Cooling Capacity	Minimum Net Sensible COP	Rating Conditions Return air (dry bulb/~~wet bulb~~ dew point)	Test Procedure

For the third public review ISC make the following changes to the revised SI table 6.8.1-11

Table 6.8.1-11 Floor Mounted Air Conditioners and *Condensing Units* Serving *Computer Rooms*—Minimum *Efficiency* Requirements

Equipment Type	Standard Model	Net Sensible Cooling Capacity	Minimum Net Sensible COP	Rating Conditions Return air (dry bulb/~~wet bulb~~ dewpoint)	Test Procedure

For the third public review ISC make the following changes to the revised IP table 6.8.1-19

Table 6.8.1-19 Ceiling Mounted Computer Room Air Conditioners —Minimum *Efficiency* Requirements

Equipment Type	Standard Model	Net Sensible Cooling Capacity	Minimum Net Sensible COP	Rating Conditions Return air (dry bulb/~~wet bulb~~ dew point~~)~~	Test Procedure

For the third public review make the following changes the revised SI table 6.8.1-19

Table 6.8.1-19 Ceiling Mounted Computer Room Air Conditioners —Minimum *Efficiency* Requirements

Equipment Type	Standard Model	Net Sensible Cooling Capacity	Minimum Net Sensible COP	Rating Conditions Return air (dry bulb/~~wet bulb~~ dew point)	Test Procedure

BSR/ASHRAE/IES Addendum BO
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum BO to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Third Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

For the third public review changes are being made to correct references to products in table F-4 to align exactly with the DOE requirements.

- *The IP and SI versions of Table F-4 should not include "Warm air" in the table title. Additionally, the SI version of Table F-4 should not include "Warm air" in the name of oil fired furnaces.*
- *The test procedure for electric furnaces <225 kBtu/h in the SI version of Table 6.8.1-5 should specifically reference DOE's test procedure in 10 CFR 430 Appendix N (" 10 CFR Part 430 Appendix N") rather than 10 CFR Part 430.*
- *This also remove the word Part from references to the DOE test procedures.*

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum BO to 90.1-2016

Make the changes as noted below to correct the references to test procedures per the 3rd public review ISC.

Table 6.8.1-5 Warm-Air Furnaces and Combination Warm-Air Furnaces/Air-Conditioning Units, Warm-Air Duct Furnaces, and Unit Heaters—Minimum *Efficiency* Requirements

Equipment Type	Size Category (Input)	Subcategory or Rating Condition	Minimum *Efficiency*	Test Procedure[a]
Warm-air furnace, gas fired for application outside the US[g]	<225,000 Btu/h	Maximum capacity[c]	80% *AFUE* (non-weatherized) or 81% AFUE (weatherized) or 80% E_t [b,d]	DOE 10 CFR ~~Part~~ 430 Appendix N or Section 2.39, Thermal *Efficiency*, ANSI Z21.47
Warm-air furnace, gas fired	≥225,000 Btu/h	Maximum capacity[c]	80% E[b,d] before 1/1/2023 81% E_t[d] after 1/1/2023	Section 2.39, Thermal *Efficiency*, ANSI Z21.47
Warm-air furnace, oil fired for application outside the US[g]	<225,000 Btu/h	Maximum capacity[c]	83% *AFUE* (non-weatherized) or 78% AFUE (weatherized) or 80% E_t[b,d]	~~DOE~~ 10 CFR ~~Part~~ 430 Appendix N or Section 42, Combustion, UL 727
Warm-air furnace, oil fired	≥225,000 Btu/h	Maximum capacity[c]	81% E_t[d] before 1/1/2023 82% E_t[d] after 1/1/2023	Section 42, Combustion, UL 727
Electric Furnaces for application outside the US[~~d~~g]	<225,000 Btu/h	all	~~78~~96% AFUE	~~DOE~~ 10 CFR ~~Part~~ 430 Appendix N
Warm-air duct furnaces, gas fired	All capacities	Maximum capacity[c]	80% E_c[e]	Section 2.10, *Efficiency*, ANSI Z83.8
Warm-air unit heaters, gas fired	All capacities	Maximum capacity[c]	80% E_c[e,f]	Section 2.10, *Efficiency*, ANSI Z83.8
Warm-air unit heaters, oil fired	All capacities	Maximum capacity[c]	80% E_c[e,f]	Section 40, Combustion, UL 731

a. Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.

b. Combination units (i.e., furnaces contained within the same cabinet as an air conditioner) not covered by the U.S. Department of Energy Code of Federal Regulations 10 CFR 430 (i.e., three-phase power or with cooling capacity greater than or equal to 65,000 Btu/h) may comply with either rating. All other units <225 kBtu/h sold in the US must meet the AFUE standards for consumer products and test using DOE's AFUE test procedure at 10 CFR 430 Subpart B Appendix N.

c. Compliance of multiple firing rate units shall be at the maximum firing rate.

d. E_t = thermal *efficiency*. Units must also include an interrupted or intermittent ignition device (IID), have jacket losses not exceeding 0.75% of the input rating, and have either power venting or a *flue damper*. A *vent damper* is an acceptable alternative to a *flue damper* for those furnaces where combustion air is drawn from the *conditioned space*.

e. E_c = combustion *efficiency* (100% less flue losses). See test procedure for detailed discussion.

f. Units must also include an interrupted or intermittent ignition device (IID) and have either power venting or an *automatic flue damper*.

g. For US applications of federal covered <225,000 Btu/h products see appendix F table F-4

Make the following changes to the IP table F-4 as part of the 3rd public review ISC

Table F-4 Residential ~~Warm Air~~ Furnaces – Minimum Efficiency Requirements for US applications (see 10 CFR Part 430)

Product Class	***Size Category (input)***	***Subcategory or rating condition***	***Minimum Efficiency***	***Test Procedure[a]***
Furnace, gas fired	<225,000 Btu/h	Non-weatherized excluding mobile home	80% AFUE	10 CFR 430 Appendix N
		Non-weatherized mobile home	80% AFUE	
		Weatherized	81% AFUE	
Furnace oil fired	<225,000 Btu/h	Non-weatherized excluding mobile home	83% AFUE $P_{W,SB}$ ≤11 W $P_{W,OFF}$ ≤11 W	10 CFR 430 Appendix N
		Non-weatherized mobile home	75% AFUE $P_{W,SB}$ ≤11 W $P_{W,OFF}$ ≤11 W	
		Weatherized	78% AFUE	
Electric Furnace	<225,000 Btu/h	All	78% AFUE $P_{W,SB}$ ≤10 W $P_{W,OFF}$ ≤10 W	10 CFR 430 Appendix N

[a] Section 12 contains a complete specification of the referenced test procedure.

The 3rd Public review ISC makes changes to the SI table 6.8.1-5 clarify the test procedure for Electric Furnaces and to correct the referenced test procedure names

Table 6.8.1-5 Warm-Air Furnaces and Combination Warm-Air Furnaces/Air-Conditioning Units, Warm-Air Duct Furnaces, and Unit Heaters—Minimum *Efficiency* Requirements

***Equipment* Type**	**Size Category (Input)**	**Subcategory or Rating Condition**	**Minimum *Efficiency***	**Test Procedure[a]**
Warm-air furnace, gas fired for ~~sale~~ applications outside the US[g]	<66 kW	Maximum capacity[c]	80% *AFUE* non-weatherized or 81% AFUE (weatherized) or 80% E_t [b,d]	DOE 10 CFR ~~Part~~ 430 Appendix N or Section 2.39, Thermal *Efficiency*, ANSI Z21.47
Warm-air furnace, gas fired	≥66 kW h	Maximum capacity~~c~~[e]	80% E_t[d] before 1/1/2023 81% E_t[d] after 1/1/2023	Section 2.39, Thermal *Efficiency*, ANSI Z21.47
Warm-air furnace, oil fired for applications outside the US[g]	<66 kW	Maximum capacity[c]	83% *AFUE* (non-weatherized) or 78% AFUE (weatherized) Or 80% E_t[b,d]	DOE 10 CFR ~~Part~~ 430 Appendix N or Section 42, Combustion, UL 727
Warm-air furnace, oil fired	≥66 kW	Maximum capacity[c]	81% $E^b{}_t$[d] before 1/1/2023 82% E_t[d] after 1/1/2023	Section 42, Combustion, UL 727
Electric Furnaces for applications outside US[g]	<66 kW	all	~~78%~~ 96% AFUE	DOE 10 CFR ~~Part~~ 430 Appendix N
Warm-air duct furnaces, gas fired	All capacities	Maximum capacity[c]	80% E_c[e]	Section 2.10, *Efficiency*, ANSI Z83.8
Warm-air unit heaters, gas fired	All capacities	Maximum capacity[c]	80% E_c[e,f]	Section 2.10, *Efficiency*, ANSI Z83.8
Warm-air unit heaters, oil fired	All capacities	Maximum capacity[c]	80% E_c[e,f]	Section 40, Combustion, UL 731

a. Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
b. Combination units (i.e., furnaces contained within the same cabinet as an air conditioner) not covered by the U.S. Department of Energy Code of Federal Regulations 10 CFR 430 (i.e., three-phase power or with cooling capacity greater than or equal to 65,000 Btu/h) may comply with either rating. All other units <225 kBtu/h sold in the US must meet the AFUE standards for consumer products and test using DOE's AFUE test procedure at 10 CFR 430 Subpart B Appendix N.
c. Compliance of multiple firing rate units shall be at the maximum firing rate.
d. E_t = thermal *efficiency*. Units must also include an interrupted or intermittent ignition device (IID), have jacket losses not exceeding 0.75% of the input rating, and have either power venting or a *flue damper*. A *vent damper* is an acceptable alternative to a *flue damper* for those furnaces where combustion air is drawn from the *conditioned space*.
e. E_c = combustion *efficiency* (100% less flue losses). See test procedure for detailed discussion.
f. Units must also include an interrupted or intermittent ignition device (IID) and have either power venting or an *automatic flue damper*.
g. For US applications of federal covered <225,000 Btu/h products see appendix F table F-4

Make the following modification to SI table F-4 for residential federal covered furnaces as part of the 3rd public review ISC

Table F-4 Residential ~~Warm Air~~ Furnaces – Minimum Efficiency Requirements for US applications (see 10 CFR Part 430)

Product Class	***Size Category (input)***	***Subcategory or rating condition***	***Minimum Efficiency***	***Test Procedure***
~~Warm air~~ Furnace, gas fired	<66 kW	Non-weatherized excluding mobile home	80% AFUE	10 CFR 430 Appendix N
		Non-weatherized mobile home	80% AFUE	
		Weatherized	81% AFUE	
~~Warm air~~ furnace oil fired	<66 kW	Non-weatherized excluding mobile home	83% AFUE $P_{W,SB}$ ≤11 W $P_{W,OFF}$ ≤11 W	10 CFR 430 Appendix N
		Non-weatherized mobile home	75% AFUE $P_{W,SB}$ ≤11 W $P_{W,OFF}$ ≤11 W	
		Weatherized	78% AFUE	
Electric Furnace	<66 kW	All	78% AFUE $P_{W,SB}$ ≤10 W $P_{W,OFF}$ ≤10 ~~W~~	10 CFR 430 Appendix N

a. Section 12 contains a complete specification of the referenced test procedure.

BSR/ASHRAE/IES Addendum BP
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum BP to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Third Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

For the third public review ISC the following changes have been made;

- Add back footnote f and g and renumber the footnotes that follow. Footnote f and g were incorrectly deleted as part of the 2nd public review ISC
- In the SI version of table F-5 the footnote c and d have been revised to have the correct reference to the appropriate requirement in alignment with the IP table F-5
- In Table 6.8.1-6 (both IP and SI versions), test procedure references made to the CFR should not include "Part". For example, the Test Procedure reference for Oil fired hot water boilers >300,000 Btu/h should be "10 CFR 431.86" instead of "10 CFR Part 431.86" so this change has been included in the third public review ISC

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by <u>underlining</u> (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum BP to 90.1-2016

Make the follow modifications to the revised 6.8.1-6 IP and the new table F-5;

Table 6.8.1-6 Gas- and Oil-Fired *Boilers*—Minimum *Efficiency* Requirements

Equipment Type[a]	Subcategory or Rating Condition	Size Category (Input)	Minimum *Efficiency*[fi]	*Efficiency* as of 3/2/2022[fi]	Test Procedure
Boilers, hot water	Gas fired	<300,000 Btu/h[f,g] for applications outside US[gi]	82% *AFUE*	82% *AFUE*	10 CFR 430 Appendix N
		≥300,000 Btu/h and ≤2,500,000 Btu/h[d]	80% E_t[c]	80% E_t[c]	10 CFR ~~Part~~ 431.86
		>2,500,000 Btu/h[a]	82% E_c[b]	82% E_c[b]	
	Oil fired[e]	<300,000 Btu/h[f,g] for applications outside US[gi]	84% *AFUE*	84% *AFUE*	10 CFR 430 Appendix N
		≥300,000 Btu/h and ≤2,500,000 Btu/h[d]	82% E_t[c]	82% E_t[c]	10 CFR ~~Part~~ 431.86
		>2,500,000 Btu/h[a]	84% E_c[b]	84% E_c[b]	
Boilers, steam	Gas fired	<300,000 Btu/h[f] for applications outside US[i]	80% *AFUE*	80% *AFUE*	10 CFR 430 Appendix N
	Gas fired—all, except natural draft	≥300,000 Btu/h and ≤2,500,000 Btu/h[d]	79% E_t[c]	79% E_t[c]	10 CFR ~~Part~~ 431.86
		>2,500,000 Btu/h[a]	79% E_t[c]	79% E_t[c]	
	Gas fired—natural draft	≥300,000 Btu/h and ≤2,500,000 Btu/h[d]	77% E_t[c]	79% E_t[c]	
		>2,500,000 Btu/h[a]	77% E_t[c]	79% E_t[c]	
	Oil fired[e]	<300,000 Btu/h[if] for applications outside US[i]	82% *AFUE*	82% *AFUE*	10 CFR 430 Appendix N
		≥300,000 Btu/h and ≤2,500,000 Btu/h[d]	81% E_t[c]	81% E_t[c]	10 CFR ~~Part~~ 431.86
		>2,500,000 Btu/h[a]	81% E_t[c]	81% E_t[c]	

a. These requirements apply to *boilers* with rated input of 8,000,000 Btu/h or less that are not packaged *boilers* and to all packaged *boilers*. Minimum *efficiency* requirements for *boilers* cover all capacities of packaged *boilers*.
b. E_c = combustion *efficiency* (100% less flue losses). See reference document for detailed information.
c. E_t = thermal *efficiency*. See reference document for detailed information.
d. Maximum capacity—minimum and maximum ratings as provided for and allowed by the unit's *controls*.
e. Includes oil-fired (residual).
f. *Boilers* shall not be equipped with a constant burning pilot light.
g. A *boiler* not equipped with a tankless domestic water-heating coil shall be equipped with an *automatic* means for adjusting the temperature of the water such that an incremental change in inferred heat load produces a corresponding incremental change in the temperature of the water supplied.
hf. For new construction refer to Section 6.4.1.1.1 for additional system compliance requirements.
ig See appendix F table F-4 for US minimum efficiencies for residential products covered by DOE requirements for US applications

Make the following modifications to the new IP table F-5

Table F-5 Residential Boiler[a] Minimum Efficiency Requirements for US applications
(Refer to 10 CFR 430)

Product Class	Minimum Efficiency prior to January 15, 2021[b]	Minimum Efficiency as of January 15, 2021[eb]	Standby Mode and Off Mode Power Consumption as of January 15, 2021[c]	Design Requirements
Gas Fired hot water boiler	82% AFUE	84% AFUE	$P_{W,SB} \leq 9$ W $P_{W,OFF} \leq 9$ W	Constant burning pilot not permitted. Automatic means for adjusting water temperature required (except for boilers equipped with tankless domestic water heating coils)[d].
Gas-Fired steam boiler	80% AFUE	82% AFUE	$P_{W,SB} \leq 8$ W $P_{W,OFF} \leq 8$ W	Constant burning pilot not permitted.
Oil-fired hot water boiler	84% AFUE	86% AFUE	$P_{W,SB} \leq 11$ W $P_{W,OFF} \leq 11$ W	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils) [d].
Oil-fired steam boiler	82% AFUE	85% AFUE	$P_{W,SB} \leq 11$ W $P_{W,OFF} \leq 11$ W	None
Electric hot water boiler	none	none	$P_{W,SB} \leq 8$ W $P_{W,OFF} \leq 8$ W	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils)[d].
Electric steam boiler	none	none	$P_{W,SB} \leq 8$ W $P_{W,OFF} \leq 8$ W	None

[a] Has a heat input rate of less than 300,000 Btu per hour for electric boilers and low-pressure steam or hot water boilers (per § 430.2)
[b] Annual Fuel Utilization Efficiency, as determined in § 430.23(n)(2)
[c] Standby mode and off mode electric power consumption as determined in § 430.23(n)(5)
[d] See § 430.32(e)(2)(iv) for additional details regarding automatic means for adjusting water temperature.

Make the following modifications to table 6.8.1-6 SI and to the new table F-5;

Table 6.8.1-6 Gas- and Oil-Fired *Boilers*—Minimum *Efficiency* Requirements

***Equipment* Type**[a]	**Subcategory or Rating Condition**	**Size Category (Input)**	**Minimum *Efficiency*** [f,i]	***Efficiency* as of 3/2/2022** [f,i]	**Test Procedure**
Boilers, hot water	Gas fired[h]	<88 kW[f,g] for applications outside US[g,i]	82% *AFUE*	82% *AFUE*	10 CFR ~~Part~~ 430 Appendix N
		≥88 kW and ≤733 kW[d]	80% E_t[c]	80% E_t[c]	10 CFR Part 431.86
		>733 kW[a]	82% E_c[b]	82% E_c[b]	
	Oil fired[e]	<88 kW[f,g] for applications outside US[g,i]	84% *AFUE*	84% *AFUE*	10 CFR ~~Part~~ 430 Appendix N
		≥88 kW and ≤733 kW[d]	82% E_t[c]	82% E_t[c]	10 CFR ~~Part~~ 431.86
		>733 kW[a]	84% E_c[b]	84% E_c[b]	
Boilers, steam	Gas fired	<88 kW [i,f] for applications outside US[g,i]	80% *AFUE*	80% *AFUE*	10 CFR ~~Part~~ 430 Appendix N
	Gas fired—all, except natural draft	≥88 kW and ≤733 kW[d]	79% E_t[c]	79% E_t[c]	10 CFR ~~Part~~ 431.86
		>733 kW[a]	79% E_t[c]	79% E_t[c]	
	Gas fired—natural draft	≥88 kW and ≤733 kW[d]	77% E_t[c]	79% E_t[c]	
		>733 kW[a]	77% E_t[c]	79% E_t[c]	
	Oil fired[e]	<88 kW[if] for applications outside US[g,i]	82% *AFUE*	82% *AFUE*	10 CFR ~~Part~~ 430 Appendix N
		≥88 kW and ≤733 kW[d]	81% E_t[c]	81% E_t[c]	10 CFR ~~Part~~ 431.86
		>733 kW[a]	81% E_t[c]	81% E_t[c]	

a. These requirements apply to *boilers* with rated input of 2346 kW or less that are not packaged *boilers* and to all packaged *boilers*. Minimum *efficiency* requirements for *boilers* cover all capacities of packaged *boilers*.
b. E_c = combustion *efficiency* (100% less flue losses). See reference document for detailed information.
c. E_t = thermal *efficiency*. See reference document for detailed information.
d. Maximum capacity—minimum and maximum ratings as provided for and allowed by the unit's *controls*.
e. Includes oil-fired (residual).
f. *Boilers* shall not be equipped with a constant burning pilot light.
g. A *boiler* not equipped with a tankless domestic water-heating coil shall be equipped with an *automatic* means for adjusting the temperature of the water such that an incremental change in inferred heat load produces a corresponding incremental change in the temperature of the water supplied.
h~~f~~. For new construction refer to Section 6.4.1.1.1 for additional system compliance requirements.
i~~g~~ See appendix F table F-4 for US minimum efficiencies for residential products covered by DOE requirements for US applications

Make the following modifications to new table F-5 SI

Table F-5 Residential Boiler[a] Minimum Efficiency Requirements for US applications
(Refer 10 CFR Part 430)

Product Class	Minimum Efficiency prior to January 15, 2021[b]	Minimum Efficiency as of January 15, 2021[eb]	Standby Mode and Off Mode Power Consumption as of January 15, 2021[dc]	Design Requirements[e]
Gas Fired hot water boiler	82% AFUE	84% AFUE	$P_{W,SB} \leq 9$ W $P_{W,OFF} \leq 9$ W	Constant burning pilot not permitted. Automatic means for adjusting water temperature required (except for boilers equipped with tankless domestic water heating coils).[ed]
Gas-Fired steam boiler	80% AFUE	82% AFUE	$P_{W,SB} \leq 8$ W $P_{W,OFF} \leq 8$ W	Constant burning pilot not permitted.
Oil-fired hot water boiler	84% AFUE	86% AFUE	$P_{W,SB} \leq 11$ W $P_{W,OFF} \leq 11$ W	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils).[ed]
Oil-fired steam boiler	82% AFUE	85% AFUE	$P_{W,SB} \leq 11$ W $P_{W,OFF} \leq 11$ W	None
Electric hot water boiler	none	none	$P_{W,SB} \leq 8$ W $P_{W,OFF} \leq 8$ W	Automatic means for adjusting temperature required (except for boilers equipped with tankless domestic water heating coils).[ed]
Electric steam boiler	none	none	$P_{W,SB} \leq 8$ W $P_{W,OFF} \leq 8$ W	None

[a] Has a heat input rate of less than 88 kW for electric boilers and low-pressure steam or hot water boilers (per § 430.2)
[b] Annual Fuel Utilization Efficiency, as determined in § 430.23(n)(2)
[c] Standby mode and off mode electric power consumption as determined in § 430.23(n)(5)
[d] See § 430.32(e)(2)(iv) for additional details regarding automatic means for adjusting water temperature.

BSR/ASHRAE/IES Addendum BR
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum BR to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Second Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

New DOE refrigeration minimum efficiency requirements went into effect on March 27, 2017 and this addendum updates the requirements in table 6.8.1-12 and 6.8.1-13 to align with the DOE requirements. There were also some nomenclature and other changes which have also been updated in this addendum.

The DOE approach is to combine the requirements of table 6.8.1-12 commercial refrigerators and 6.8.1-13 into one combined table and we have followed this approach and integrated all the refrigeration requirements into table 6.8.1-13 and will eliminate table 6.8.1-12.

The economic justification for the more stringent efficiency levels was addressed in the DOE rulemaking documents for the applicable energy conservation standards rulemaking

The following is a summary of the ISC changes;

1. As requested by DOE they asked that we merge the cells in the Rating Temperature and Operating Temperature columns for all commercial ice cream freezer equipment classes to clearly show that the same rating temperature and operating temperature apply to all classes. This was done by showing the same requirements in both rating and operating for commercial ice cream freezer equipment classes.
2. In the IP and SI tables there are several missing '+' signs (between the variable and intercept in the linear equations) and superfluous periods (at the end of equations) in the Maximum Daily Energy Consumption equations for Self-Contained Commercial Refrigerators and Commercial Freezers with and Without Doors and Self-Contained Commercial Ice Cream Freezers and these have been corrected
3. Remote Condensing Horizontal Open Commercial Freezers are mistakenly classified as 'HZO.RC.M' instead of 'HZO.RC.L' in the Equipment Classifications in the SI table. Per footnote c, rating temperature codes are "M" for medium temperature, "L" for low temperature, and "I" for ice cream temperature.
4. The operating mode classification for Vertical Open Self-Contained Commercial Refrigerators and Freezers is mistakenly included as 'SV' instead of 'SC' in the same table - the full equipment classification for this class should be 'VOP.SC.M' instead of 'VOP.SV.M'.

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by <u>underlining</u> (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum BR to 90.1-2016

Delete 6.4.1.1.l because table 6.8.1-12 will be merged into renumbered table 6.8.1-13 which will become table 6.8.1-17 and revised m as shown. This was in the first public review and was not changed in the ISC

Delete the current IP table 6.8.1-12. Note it will not be replaced and will be integrated into table 6.8.1-13

Delete the current IP table 6.8.1-13 and replace it with a new revised table combining table 6.8.1-12 and 6.8.1-13.;and replace with the following new table 6.8.1-13

Table 6.8.1-13 Commercial Refrigerators, Freezers and Refrigeration—Minimum *Efficiency* Requirements

Equipment Category	Condensing Unit Configuration	Equipment Family	Rating Temp (F)	Operating Temp (F)	Equipment Classification[c]	Maximum daily energy consumption kWh/day [d,e]	Test Standard
Remote Condensing Commercial Refrigerators and Commercial Freezers	Remote (RC)	Vertical Open (VOP)	38 (M)	≥32	VOP.RC.M	0.64 x TDA +4.07	AHRI 1200
			0 (L)	<32	VOP.RC.L	2.20 x TDA + 6.85	
		Semivertical Open (SVO)	38 (M)	≥32	SVO.RC.M	0.66 x TDA + 3.18	
			0 (L)	<32	SVO.RC.L	2.20 x TDA + 6.85	
		Horizontal Open (HZO)	38 (M)	≥32	HZO.RC.M	0.35 x TDA + 2.88	
			0 (L)	<32	HZO.RC.L	0.55 x TDA + 6.88	
		Vertical Closed Transparent (VCT)	38 (M)	≥32	VCT.RC.M	0.15 x TDA + 1.95	
			0 (L)	<32	VCT.RC.L	0.49 x TDA + 2.61	
		Horizontal Closed Transparent (HCT)	38 (M)	≥32	HCT.RC.M	0.16 x TDA + 0.13	
			0 (L)	<32	HCT.RC.L	0.34 x TDA + 0.26	
		Vertical Closed Solid (VCS)	38 (M)	≥32	VCS.RC.M	0.10 x V + 0.26	
			0 (L)	<32	VCS.RC.L	0.21 x V + 0.54	
		Horizontal Closed Solid (HCS)	38 (M)	≥32	HCS.RC.M	0.10 x V+ 0.26	
			0 (L)	<32	HCS.RC.L	0.21 x V + 0.54	
		Service Over Counter (SOC)	38 (M)	≥32	SOC.RC.M	0.44 x TDA + 0.11	
			0 (L)	<32	SOC.RC.L	0.93 x TDA + 0.22	
Self-Contained Commercial Refrigerators and Commercial Freezers with and Without Doors	Self-Contained (SC)	Vertical Open (VOP)	38 (M)	≥32	VOP.~~SC~~SV.M	1.69 x TDA + 4.71	AHRI 1200
			0 (L)	<32	VOP.SC.L	4.25 x TDA + 11.82	
		Semivertical Open (SVO)	38 (M)	≥32	SVO.SC.M	1.70 x TDA + 4.59	
			0 (L)	<32	SVO.SC.L	4.26 x TDA +11.51	
		Horizontal Open (HZO)	38 (M)	≥32	HZO.SC.M	0.72 x TDA + 5.55	
			0 (L)	<32	HZO.SC.L	1.90 x TDA + 7.08	
		Vertical Closed Transparent (VCT)	38 (M)	≥32	VCT.SC.M	0.10 x V + 0.86	
			0 (L)	<32	VCT.SC.L	0.29 x V+ 2.95	
		Vertical Closed Solid (VCS)	38 (M)	≥32	VCS.SC.M	0.05 x V + 1.36	
			0 (L)	<32	VCS.SC.L	0.22 x V + 1.38	
		Horizontal Closed Transparent (HCT)	38 (M)	≥32	HCT.SC.M	0.06 x V + 0.37	
			0 (L)	<32	HCT.SC.L	0.08 x V + 1.23	
		Horizontal Closed Solid (HCS)	38 (M)	≥32	HCS.SC.M	0.05 x V + 0.91	
			0 (L)	<32	HCS.SC.L	0.06 x V + 1.12	
		Service Over Counter (SOC)	38 (M)	≥32	SOC.SC.M	0.52 x TDA + 1.00	
			0 (L)	<32	SOC.SC.L	1.10 x TDA + 2.10	

Self-Contained Commercial Refrigerators with Transparent Doors for Pull-Down Temperature Applications	Self-Contained (SC)	Pull-Down (PD)	38 (M)	≥32	PD.SC.M	0.11 x V + 0.81	AHRI 1200
Commercial Ice-Cream Freezers	Remote (RC)	Vertical Open (VOP)	-15 (I)	≤-5[b]	VOP.RC.I	2.79 x TDA + 8.70	AHRI 1200
		Semivertical Open (SVO)			SVO.RC.I	2.79 x TDA + 8.70	
		Horizontal Open (HZO)			HZO.RC.I	0.7 x TDA + 8.74	
		Vertical Closed Transparent (VCT)			VCT.RC.I	0.58 x TDA + 3.05	
		Horizontal Closed Transparent (HCT)			HCT.RC.I	0.4 x TDA + 0.31	
		Vertical Closed Solid (VCS)			VCS.RC.I	0.25 x V + 0.63	
		Horizontal Closed Solid (HCS)			HCS.RC.I	0.25 x V + 0.63	
		Service Over Counter (SOC)			SOC.RC.I	1.09 x TDA + 0.26	
	Self-Contained (SC)	Vertical Open (VOP)			VOP.SC.I	5.4 x TDA + 15.02	AHRI 1200
		Semivertical Open (SVO)			SVO.SC.I	5.41 x TDA + 14.63	
		Horizontal Open (HZO)			HZO.SC.I	2.42 x TDA + 9.00	
		Vertical Closed Transparent (VCT)			VCT.SC.I	0.62 x TDA + 3.29	
		Horizontal Closed Transparent (HCT)			HCT.SC.I	0.56 x TDA + 0.43	
		Vertical Closed Solid (VCS)			VCS.SC.I	0.34 × V + 0.88	
		Horizontal Closed Solid (HCS)			HCS.SC.I	0.34 × V + 0.88	
		Service Over Counter (SOC)			SOC.SC.I	1.53 x TDA + 0.36	

a. The meaning of the letters in this column is indicated in the columns to the left.

b. Ice-cream freezer is defined in 10 CFR 431.62 as a commercial freezer that is designed to operate at or below −5 °F and that the manufacturer designs, markets, or intends for the storing, displaying, or dispensing of ice cream.

c. Equipment class designations consist of a combination (in sequential order separated by periods (AAA).(BB).(C)) of the following: (AAA)—An equipment family code (VOP = vertical open, SVO = semivertical open, HZO = horizontal open, VCT = vertical closed transparent doors, VCS = vertical closed solid doors, HCT = horizontal closed transparent doors, HCS = horizontal closed solid doors, and SOC = service over counter); (BB)—An operating mode code (RC = remote condensing and SC = self-contained); and (C)—A rating temperature code (M = medium temperature [38°F], L = low temperature [0°F], or I = ice cream temperature [-15°F]). For example, "VOP.RC.M" refers to the "vertical open, remote condensing, medium temperature" equipment class.

d. V is the volume of the case (ft^3) as measured in AHRI Standard 1200, Appendix C.

e. TDA is the total display area of the case (ft^2) as measured in AHRI Standard 1200, Appendix D.

Delete the current SI table 6.8.1-12 and integrate the new table into table 6.8.1-13

Modify the SI table 6.8.1-13 which is a combination of the old table 6.8.1-12 and 6.8.1-1 with the ISC changes

Table 6.8.1-13 Commercial Refrigerators, Freezer, and Refrigeration—Minimum *Efficiency* Requirements

Equipment Category	Condensing Unit Configuration	Equipment Family	Rating Temp (C)	Operating Temp (C)	Equipment Classification[c]	Maximum daily energy consumption kWh/day [d,e]	Test Standard
Remote Condensing Commercial Refrigerators and Commercial Freezers	Remote (RC)	Vertical Open (VOP)	3 (M)	≥0	VOP.RC.M	6.89 x TDA + 4.07	AHRI 1201
			-18 (L)	<0	VOP.RC.L	23.68 x TDA + 6.85	
		Semivertical Open (SVO)	3 (M)	≥0	SVO.RC.M	7.10 x TDA + 3.18	
			-18 (L)	<0	SVO.RC.L	23.68 x TDA + 6.85	
		Horizontal Open (HZO)	3 (M)	≥0	HZO.RC.M	3.77 x TDA + 2.88	
			-18 (L)	<0	HZO.RC.M	5.92 x TDA + 6.88	
		Vertical Closed Transparent (VCT)	3 (M)	≥0	VCT.RC.~~M~~L	1.61 x TDA + 1.95	
			-18 (L)	<0	VCT.RC.L	5.27 x TDA + 2.61	
		Horizontal Closed Transparent (HCT)	3 (M)	≥0	HCT.RC.M	1.72 x TDA + 0.13	
			-18 (L)	<0	HCT.RC.L	3.66 x TDA + 0.26	
		Vertical Closed Solid (VCS)	3 (M)	≥0	VCS.RC.M	3.53 x V + 0.26	
			-18 (L)	<0	VCS.RC.L	7.42 x V + 0.54	
		Horizontal Closed Solid (HCS)	3 (M)	≥0	HCS.RC.M	3.53 x V+ 0.26	
			-18 (L)	<0	HCS.RC.L	7.42 x V + 0.54	
		Service Over Counter (SOC)	3 (M)	≥0	SOC.RC.M	4.74 x TDA + 0.11	
			-18 (L)	<0	SOC.RC.L	10.01 x TDA + 0.22	
Self-Contained Commercial Refrigerators and Commercial Freezers With and Without Doors	Self-Contained (SC)	Vertical Open (VOP)	3 (M)	≥0	VOP.~~SV~~SC.M	18.19 x TDA + 4.71	AHRI 1201
			-18 (L)	<0	VOP.SC.L	45.75 x TDA + 11.82	
		Semivertical Open (SVO)	3 (M)	≥0	SVO.SC.M	18.30 x TDA + 4.59	
			-18 (L)	<0	SVO.SC.L	45.85 x TDA + 11.51	
		Horizontal Open (HZO)	3 (M)	≥0	HZO.SC.M	7.75 x TDA + 5.55	
			-18 (L)	<0	HZO.SC.L	20.45 x TDA + 7.08	
		Vertical Closed Transparent (VCT)	3 (M)	≥0	VCT.SC.M	3.53 x V + 0.86	
			-18 (L)	<0	VCT.SC.L	10.24 x V+ 2.95	
		Vertical Closed Solid (VCS)	3 (M)	≥0	VCS.SC.M	1.77 x V + 1.36	
			-18 (L)	<0	VCS.SC.L	7.77 x V + 1.38	
		Horizontal Closed Transparent (HCT)	3 (M)	≥0	HCT.SC.M	2.12 x V + 0.37	
			-18 (L)	<0	HCT.SC.L	2.83 x V + 1.23	
		Horizontal Closed Solid (HCS)	3 (M)	≥0	HCS.SC.M	1.77 x V + 0.91	
			-18 (L)	<0	HCS.SC.L	2.12 x V + 1.12	
		Service Over Counter (SOC)	3 (M)	≥0	SOC.SC.M	5.60 x TDA + 1.00	
			-18 (L)	<0	SOC.SC.L	11.84 x TDA + 2.10	
Self-Contained Commercial Refrigerators with Transparent Doors for Pull-Down Temperature Applications	Self-Contained (SC)	Pull-Down (PD)	3 (M)	≥0	PD.SC.M	3.88 x V + 0.81	AHRI 1201
Commercial Ice-Cream Freezers	Remote (RC)	Vertical Open (VOP)	-26 (I)	≤-20=-26[b]	VOP.RC.I	30.03 x TDA + 8.70	AHRI 1201
		Semivertical Open (SVO)			SVO.RC.I	30.03 x TDA + 8.70	

		Horizontal Open (HZO)			HZO.RC.I	7.53 x TDA + 8.74	
		Vertical Closed Transparent (VCT)			VCT.RC.I	6.24 x TDA + 3.05	
		Horizontal Closed Transparent (HCT)			HCT.RC.I	4.31 x TDA + 0.31	
		Vertical Closed Solid (VCS)			VCS.RC.I	8.83 x V + 0.63	
		Horizontal Closed Solid (HCS)			HCS.RC.I	8.83 x V + 0.63	
		Service Over Counter (SOC)			SOC.RC.I	11.73 x TDA + 0.26	
	Self-Contained (SC)	Vertical Open (VOP)			VOP.SC.I	58.13 x TDA + 15.02	
		Semivertical Open (SVO)			SVO.SC.I	58.23 x TDA + 14.63	
		Horizontal Open (HZO)			HZO.SC.I	26.05 x TDA + 9.00	
		Vertical Closed Transparent (VCT)			VCT.SC.I	6.67 x TDA + 3.29	
		Horizontal Closed Transparent (HCT)			HCT.SC.I	6.03 x TDA + 0.43	
		Vertical Closed Solid (VCS)			VCS.SC.I	12.01 × V + 0.88.	
		Horizontal Closed Solid (HCS)			HCS.SC.I	12.01 × V + 0.88.	
		Service Over Counter (SOC)			SOC.SC.I	16.47 x TDA + 0.36	

a. The meaning of the letters in this column is indicated in the columns to the left.

b. Ice-cream freezer is defined in 10 CFR 431.62 as a commercial freezer that is designed to operate at or below −21 °C and that the manufacturer designs, markets, or intends for the storing, displaying, or dispensing of ice cream.

c. Equipment class designations consist of a combination (in sequential order separated by periods (AAA).(BB).(C)) of the following: (AAA)—An equipment family code (VOP = vertical open, SVO = semivertical open, HZO = horizontal open, VCT = vertical closed transparent doors, VCS = vertical closed solid doors, HCT = horizontal transparent doors, HCS = horizontal closed solid doors, and SOC = service over counter); (BB)—An operating mode code (RC = remote condensing and SC = self contained); and (C)—A rating temperature code (M = medium temperature [3.3°C], L = low temperature [-18°C], or I = ice cream temperature [-26.1 °C]). For example, "VOP.RC.M" refers to the "vertical open, remote condensing, medium temperature" equipment class.

d. V is the volume of the case (m^3) as measured in AHRI Standard 1200, Appendix C.

e. TDA is the total display area of the case (m^2) as measured in AHRI Standard 1200, Appendix D.

BSR/ASHRAE/IES Addendum by
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum by to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Second Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

In response to comments from the first public review of addendum BY, two additional exceptions are being added to (a) exempt smaller buildings and additions from this requirement, and (b) clarify that alterations (e.g. roof equipment, lighting, or other replacement or upgrades) do not trigger this requirement. The original addendum was determined to be cost effective per ASHRAE's scalar cost effectiveness analysis, and these additional exceptions will increase adoptability and cost effectiveness.

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum BY to 90.1-2016

Modify the standard as follows (IP and SI Units)

10.5.1.1 On-site renewable energy.
The *building* site shall have *equipment* for *on-site renewable energy* with a rated capacity of not less than 0.25 W/ft² or 0.85 Btu/ft² (2.7W/m²) multiplied by the sum of the *gross conditioned floor area* for all floors up to the three (3) largest floors.

Exceptions to 10.5.1.1:

1. Any *building* located where an unshaded flat plate collector oriented towards the equator and tilted at an angle from horizontal equal to the latitude receives an annual daily average incident solar radiation less than 3.5 kWh/m²·day (1.1 kBtu/ft²·day).
2. Any *building* where more than 80% of the *roof* area is covered by any combination of *equipment* other than for *on-site renewable energy systems*, planters, vegetated space, *skylights* or occupied *roof* deck.
3. Any *building* where more than 50% of *roof* area is shaded from direct-beam sunlight by natural objects or by structures that are not part of the *building* for more than 2,500 annual hours between 8:00 AM and 4:00 PM.

4. New construction and *additions* in which the sum of the *gross conditioned floor area* of the three largest floors is less than 10,000 ft^2 (1,000 m^2).

5. *Alterations* that do not include *additions*.

BSR/ASHRAE/IES Addendum cb
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cb to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

First Public Review (May 2019)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

SSPC 90.1 explored areas outside of the physical building where energy savings would be possible by applying provisions presently in the Standard. Examples include lighting in parking lots that may not be directly associated with a building or lighting and equipment associated with campus environments or parks.

This addendum revises the Title Purpose and Scope (TPS) of Standard 90.1 to apply to areas outside of the physical building. The addendum introduces a new term "site" to define those types of environments where a physical building may not be present but the energy consuming lighting and equipment are covered by provisions in the Standard. Also, a new provision is included in Chapter 4 "Administration and Enforcement" to address sites with or without buildings.

Finally, related revisions are made to existing definitions and sections of Standard 90.1 impacted by the above modifications.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by <u>underlining</u> (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum cb to 90.1-2016

Modify the standard as follows (IP and SI Units)

*MODIFY TITLE, PURPOSE & SCOPE AS FOLLOWS:

Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

1 Purpose

1.1

To establish the minimum *energy efficiency* requirements of *buildings* other than *low-rise residential buildings,* and *sites* for

a. design, *construction,* and a plan for operation and maintenance; and
b. utilization of on-site, renewable *energy* resources.

2 Scope

2.1

This standard provides

a. minimum *energy*-efficient requirements for the design and *construction*, and a plan for operation and maintenance of
   1. new *buildings* and their *systems*,
   2. new portions of *buildings* and their *systems*,
   3. new *systems* and *equipment* specifically identified in this standard that are part of a *site*,
   ~~3~~ 4. new *systems* and *equipment* in *existing buildings*, and
   ~~4~~ 5. new *equipment* or *building systems* specifically identified in ~~the~~ this standard that are part of ~~industrial or manufacturing~~ *processes* *applications*

   and
b. criteria for determining compliance with these requirements.

2.2

The provisions of this standard do not apply to

a. single-family houses, multifamily structures of three stories or fewer above *grade*, manufactured houses (mobile homes), and manufactured houses (modular) or
b. *buildings* that use neither electricity nor *fossil fuel*.

2.3

Where specifically noted in this standard, certain other *buildings* or elements of *buildings* or *sites* shall be exempt.

2.4

This standard shall not be used to circumvent any safety, health, or environmental requirements.

*ADD NEW DEFINTION "SITE" and MODIFY EXISTING DEFINITIONS AS FOLLOWS

on-site renewable energy: *energy* generated from renewable sources produced at the ~~*building*~~ building *site*.

purchased energy: *energy* or power purchased for consumption and delivered to the ~~*building*~~ building *site*.

purchased energy rates: costs for units of *energy* or power purchased at the ~~*building*~~ building *site*. These costs may include *energy* costs as well as costs for power *demand* as determined by the *adopting authority*.

***site*:** An area of land that is under the control of a single owner or entity, which contains *systems* or *equipment*.

site-recovered energy: waste *energy* recovered at the ~~*building*~~ building *site* that is used to offset consumption of purchased *fuel* or electrical *energy* supplies.

site-solar energy: thermal, chemical, or electrical *energy* derived from direct conversion of incident solar radiation at the ~~*building*~~ building *site* and used to offset consumption of purchased *fuel* or electrical *energy* supplies. For the purposes of applying this standard, *site-solar energy* shall not include passive heat gain through *fenestration systems*.

solar energy source: source of thermal, chemical, or electrical *energy* derived from direct conversion of incident solar radiation at the ~~*building*~~ building *site*.

*ADD NEW SECTION 4.1.1.6 *SITE* TO CHAPTER 4 AS FOLLOWS:

Chapter 4 – Administration and Enforcement

4.1.1.6 Sites
Sites, with or without a contiguous building or buildings, and s*ite systems* and *equipment* using or producing *energy*, such as site lighting, motors for pumps (for example, fountain pumps and water movement equipment) and transportation equipment (for example, elevators and escalators) shall comply with the standard as described in Section 4.2 for *systems* and *equipment* specifically identified in the standard.

*MODIFY 10.4.5 AS FOLLOWS:

10.4.5 Whole-Building Energy Monitoring
Measurement devices shall be installed ~~at the *building* site~~ to monitor the *energy* use of each new *building*.

10.4.5.2 Recording and Reporting
The *energy* use of each *building* ~~on the *building* site~~ shall be recorded at a minimum of every 60 minutes and reported at least hourly, daily, monthly, and annually. The *system* shall be capable of maintaining all data collected for a minimum of 36 months and creating user reports showing at least hourly, daily, monthly, and annual *energy* consumption and *demand*.

*MODIFY APPENDIX G AS FOLLOWS:

Normative Appendix G, Table G3.1, 10. HVAC Systems, Baseline Building Performance…

> **Exception:** For *fossil fuel systems* where natural gas is not available for the proposed *site* or building as determined by the *rating authority*, the baseline *HVAC system*s shall be modeled using propane as their *fuel*.

Normative Appendix G, Table G3.1, 11. Service Water-Heating Systems, Baseline Building Performance …

> **Exceptions:** Where natural gas is not available for the proposed *site* or *building*, as by the *rating authority*, gas storage *water heaters* shall be modeled using propane as their *fuel*.

NOTE TO REVIEWER: Addenda BK and BF also affect portions of sections changed by this proposal. On-site electricity generation systems is a new definition incorporated into the standard by Addendum bk that is affected by this addendum. Addendum bf adds a new Section 10.4.5 Air Curtains, so Section 10.4.5 Whole-Building Energy Modeling and subsections are renumbered to 10.4.6.

The following shows how the addendum will appear combined with addenda BK and BF.
Additional changes needed to combine this addendum with prior addenda are shown in strikeout and underline. Such changes do not change the substantive nature of prior approved addenda and are not available for comment.

Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings

1 Purpose

1.1

To establish the minimum *energy efficiency* requirements of *buildings* other than *low-rise residential buildings*, and *sites* for

a. design, *construction*, and a plan for operation and maintenance; and
b. utilization of on-site, renewable *energy* resources.

2 Scope

2.1

This standard provides

a. minimum *energy*-efficient requirements for the design and *construction*, and a plan for operation and maintenance of
   1. new *buildings* and their *systems*,
   2. new portions of *buildings* and their *systems*,
   3. new *systems* and *equipment* specifically identified in this standard that are part of a *site*,
   4. new *systems* and *equipment* in *existing buildings*, and
   5. new *equipment* or *building systems* specifically identified in this standard that are part of *process applications*

   and
b. criteria for determining compliance with these requirements.

2.2

The provisions of this standard do not apply to

a. single-family houses, multifamily structures of three stories or fewer above *grade*, manufactured houses (mobile homes), and manufactured houses (modular) or
b. *buildings* that use neither electricity nor *fossil fuel*.

2.3

Where specifically noted in this standard, certain other *buildings* or elements of *buildings* or *sites* shall be exempt.

2.4

This standard shall not be used to circumvent any safety, health, or environmental requirements.

…

on-site electricity generation systems: systems located at the ~~*building site*~~ building *site* that generate electricity, including but not limited to generators, combined heat and power systems, fuel cells, and *on-site renewable energy* systems.

on-site renewable energy: *energy* generated from renewable sources produced at the building *site*.

purchased energy: *energy* or power purchased for consumption and delivered to the building *site*.

purchased energy rates: costs for units of *energy* or power purchased at the building *site*. These costs may include *energy* costs as well as costs for power *demand* as determined by the *adopting authority*.

***site*:** An area of land that is under the control of a single owner or entity, which contains *systems* or *equipment*.

site-recovered energy: waste *energy* recovered at the building *site* that is used to offset consumption of purchased *fuel* or electrical *energy* supplies.

site-solar energy: thermal, chemical, or electrical *energy* derived from direct conversion of incident solar radiation at the building *site* and used to offset consumption of purchased *fuel* or electrical *energy* supplies. For the purposes of applying this standard, *site-solar energy* shall not include passive heat gain through *fenestration systems*.

solar energy source: source of thermal, chemical, or electrical *energy* derived from direct conversion of incident solar radiation at the building *site*.

Chapter 4 – Administration and Enforcement

4.1.1.6 Sites
Sites, with or without a contiguous building or buildings, and s*ite systems* and *equipment* using or producing *energy*, such as site lighting, motors for pumps (for example, fountain pumps and water movement equipment) and transportation equipment (for example, elevators and escalators) shall comply with the standard as described in Section 4.2 for *systems* and *equipment* specifically identified in the standard.

10.4.6 Whole-Building Energy Monitoring
Measurement devices shall be installed to monitor the *energy* use of each new *building*.

10.4.6.2 Recording and Reporting
The *energy* use of each *building* shall be recorded at a minimum of every 60 minutes and reported at least hourly, daily, monthly, and annually. The *system* shall be capable of maintaining all data collected for a minimum of 36 months and creating user reports showing at least hourly, daily, monthly, and annual *energy* consumption and *demand*.

Normative Appendix G, Table G3.1, 10. HVAC Systems, Baseline Building Performance…

> **Exception:** For *fossil fuel systems* where natural gas is not available for the proposed *site* or building as determined by the *rating authority*, the baseline *HVAC system*s shall be modeled using propane as their *fuel*.

Normative Appendix G, Table G3.1, 11. Service Water-Heating Systems, Baseline Building Performance …

> **Exceptions:** Where natural gas is not available for the proposed *site* or *building*, as by the *rating authority*, gas storage *water heaters* shall be modeled using propane as their *fuel*.

BSR/ASHRAE/IES Addendum CD
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum di to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Second Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Section 6.5.6.1 currently reads as follows in the 90.1 standard.

6.5.6.1 Exhaust Air Energy Recovery

Energy recovery *systems* required by this section shall result in an *enthalpy recovery ratio* of at least 50%. A 50% *enthalpy recovery ratio* shall mean a change in the enthalpy of the *outdoor air* supply equal to 50% of the difference between the *outdoor air* and entering exhaust air enthalpies at *design conditions*. Provision shall be made to bypass or *control* the *energy* recovery *system* to permit *air economizer* operation as required by Section 6.5.1.1

The Mechanical Subcommittee proposes a change to this section to clarify the requirement underlined in the final sentence. The reason for this proposed change is that there are no requirements defining what the bypass or control must accomplish in order to save energy.

Statement on Potential Energy Impact:
The proposed addenda will save energy in two ways:

1) *Eliminate energy exchange in economizing mode that reduces the effectiveness of economizing.*
2) *Reduce the pressure drop through the energy recovery system in economizing mode.*

This addenda is intended to be primarily a clarification of the original intention for bypass and control to permit economizer operation. The Bypass working group evaluated several systems and found that with this proposal, a more clear control strategy is required where energy recovery systems are installed. Controls are already required by the standard; however, in some cases compliance with the existing standard may result in less than optimum economizer operation and increased fan energy use.

Potential cost impact: The clarified requirements may require two bypass dampers rather than one in some cases. Depending upon design choices, cost may vary, and for an example review, the clarification is deemed to require the cost of one additional damper at around $600 for a 5 ton cooling system. Five tons of cooling is near the minimum capacity where an economizer is required and savings are expected to be least at this capacity. A simple analysis was conducted based on loss of 50% economizer savings and a change of 1.2” static pressure in one airstream during times of economizer operation. Climate zones 6b, 4c and 2b were analyzed using a simplified bin calculation, with the resulting annual savings ranging from $115 to $139 and the resulting scalar payback period ranging from 4.4 to 5.3 years. Since all the scalar paybacks from this simple analysis were less than half the scalar threshold of 12 years required for a 15 year life, further more sophisticated analysis was not pursued. It should be noted that the cost is relatively high for the minimum capacity unit reviewed where the provisions would apply, and that for larger units the cost would be a smaller proportional savings.

2nd ISC Public Review:

- *Permitted air pressure drop of the exhaust airstream increased to 0.4 in. H_2O.*
- *Limit of 10% airflow for HX that cannot be stopped applies to only one airstream*
- *Language clarified to show that the requirements only apply to the energy exchanger. It does not apply to filters or other appurtenances.*

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum CD to 90.1-2016

Modify the standard as follows (IP and SI Units)

(sections not shown are unchanged from the first public review)

6.5.6.1.2 Provision for Air Economizer or Bypass Operation
Provision shall be made for both *outdoor air* and exhaust air to bypass or control the *energy* recovery *system* to enable *economizer* operation as required by Section 6.5.1.1. The bypass or *control* shall meet the following criteria:

a. For *energy* recovery *systems* where the transfer of *energy* cannot be stopped, bypass provision shall prevent the total airflow rate ~~rates~~ of either ~~both~~ *outdoor air* or ~~and~~ exhaust air through the *energy* recovery exchanger ~~*system*~~ from exceeding 10% of the full design airflow rate.
b. The pressure drop of the *outdoor air* through the *energy* recovery exchanger ~~system~~ shall not exceed 0.4 in. H_2O (100 Pa); the pressure drop of the exhaust air through the *energy* recovery exchanger ~~system~~ shall not exceed 0.4 ~~0.3~~ in. H_2O (100 ~~75~~ Pa).

Exceptions to 6.5.6.1.2

1. *Energy* recovery *systems* with 80% or more *outdoor air* at full design airflow rate and not exceeding 10,000 CFM (4.72 m^3/s).

---

*NOTE TO REVIEWER: In addition to approved addenda H and AM, Section 6.5.6.1 is **pending modification by addenda DN and AY**. The following shows how section 6.5.6.1 will appear when **this addendum and addenda DN, H, AM and AY are combined,** if addenda AY and DN are approved. Additional changes needed to combine this addendum with prior addenda are shown in strikeout and underline. Such changes do not change the substantive nature of prior approved addenda (just relocation of some text and renumbering) and are not available for comment.*

Definitions

***energy recovery, series*:** A three-step process in which the first step is to remove energy from a single airstream without the use of mechanical cooling. In the second step the air steam is mechanically cooled for the purpose of dehumidification. In the third step the energy removed in step one is reintroduced to the air stream.

energy recovery ratio, series (SERR): The difference between the dry bulb air temperatures leaving the series energy recovery unit and leaving the dehumidifying coil divided by the difference between 75˚F and the dry bulb temperature of the air leaving the dehumidifying cooling coil.

enthalpy recovery ratio: change in the enthalpy of the *outdoor air* supply divided by the difference between the *outdoor air* and entering exhaust air enthalpy, expressed as a percentage.

nontransient: occupancy of a dwelling unit or sleeping unit for more than 30 days.

6.5.6.1 Exhaust Air Energy Recovery

6.5.6.1.1 Nontransient dwelling units
Nontransient dwelling units shall be provided with *outdoor air* energy recovery ventilation systems. For *nontransient dwelling units*, *energy* recovery *systems* shall result in an *enthalpy recovery ratio* of at least 50% at cooling design condition and at least 60% at heating design condition. The *energy* recovery *system* shall provide the required *enthalpy recovery ratio* at both heating and cooling *design conditions*, unless one mode is not required for the climate zone by the exceptions below.

Exceptions to 6.5.6.1.1:
1. *Nontransient dwelling units* in Climate Zone 3C.
2. *Nontransient dwelling units* with no more than 500 ft^2 of conditioned floor area in Climate Zones 0, 1, 2, 3, 4C, and 5C.
3. *Enthalpy recovery ratio* requirements at heating design condition in Climate Zones 0, 1, and 2.
4. *Enthalpy recovery ratio* requirements at cooling design condition in Climate Zones 4, 5, 6, 7, and 8.

6.5.6.1.2 Spaces other than nontransient dwelling units
Each fan *system* serving spaces other than *nontransient dwelling units* shall have an *energy* recovery *system* where when the design supply fan airflow rate exceeds the value listed in Tables 6.5.6.1.2-1 and 6.5.6.1.2-2, based on the climate zone and percentage of *outdoor air* at design airflow conditions. Table 6.5.6.1.2-1 shall be used for all *ventilation systems* that operate less than 8000 hours per year, and Table 6.5.6.1.2-2 shall be used for all *ventilation systems* that operate 8000 or more hours per year.

Exceptions to 6.5.6.1.2
1. Laboratory *systems* meeting Section 6.5.7.3.
2. *Systems* serving *spaces* that are not cooled and that are heated to less than 60°F.
3. Heating energy recovery where more than 60% of the *outdoor air* heating *energy* is provided from *site-recovered energy* or *site-solar energy* in Climate Zones 5 through 8.
4. *Enthalpy recovery ratio* requirements at heating *design condition* in Climate Zones 0, 1, and 2.
5. *Enthalpy recovery ratio* requirements at cooling *design condition* in Climate Zones 3C, 4C, 5B, 5C, 6B, 7, and 8.
6. Where the sum of the airflow rates exhausted and relieved within 20 ft. of each other is less than 75% of the design outdoor air rate, excluding exhaust air that is:
   a. used for another *energy* recovery *system*,
   b. not allowed by ASHRAE Standard 170 for use in *energy* recovery *systems* with leakage potential, or
   c. of Class 4 as defined in ASHRAE Standard 62.1.
7. Heating energy recovery for *systems* in Climate Zones 0 through 4 requiring dehumidification during heating mode that employ *series energy recovery* and have a minimum SERR of 0.40.
8. *Systems* expected to operate less than 20 hours per week at the *outdoor air* percentage covered by Table 6.5.6.1.2-1.
9. Indoor pool dehumidifiers meeting Section 6.5.6.4.

6.5.6.1.2.1 Minimum Enthalpy Recovery Ratio
Energy recovery *systems* required by this section shall result in an *enthalpy recovery ratio* of at least 50%. A 50% *enthalpy recovery ratio* shall mean a change in the enthalpy of the *outdoor air* supply equal to 50% of the difference between the *outdoor air* and entering exhaust air enthalpies at *design conditions*.

The *energy* recovery *system* shall provide the required *enthalpy recovery ratio* at both heating and cooling *design conditions*, unless one mode is not required for the climate zone by the exceptions above.

6.5.6.1.2.2 Provision for Air Economizer or Bypass Operation
Provision shall be made for both *outdoor air* and exhaust air to bypass or control the *energy* recovery *system* to enable economizer operation as required by Section 6.5.1.1. The bypass or *control* shall meet the following criteria:

a. For *energy* recovery *systems* where the transfer of *energy* cannot be stopped, bypass provision shall prevent the total airflow rate rates of either both *outdoor air* or and exhaust air through the energy recovery exchanger from exceeding 10% of the full design airflow rate.
b. The pressure drop of the outdoor air through the energy recovery system shall not exceed 0.4 in. H_2O (100 Pa); the pressure drop of the exhaust air through the energy recovery exchanger shall not exceed 0.4 in. H_2O (100 Pa).

Exceptions to 6.5.6.1.2.2

1. Energy recovery *systems* with 80% or more *outdoor air* at full design airflow rate and not exceeding 10,000 CFM (4.72 m^3/s).

Table 6.5.6.1.2-1 Exhaust Air *Energy* Recovery Requirements for *Ventilation Systems* Operating Less than 8000 Hours per Year

(no changes to table)

Table 6.5.6.1.2-2 Exhaust Air *Energy* Recovery Requirements for *Ventilation Systems* Operating Greater than or Equal to 8000 Hours per Year

(no changes to table)

BSR/ASHRAE/IES Addendum cf
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cf to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Second Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This proposed addendum adds vacuum insulating glazing to the list of options for reach-in doors in walk-in coolers and freezers. Vacuum insulating glazing products have been recently commercialized by multiple manufacturers and are already being used in display doors for walk-in coolers, walk-in freezers, and standalone refrigerated display cases. The thermal resistance of vacuum insulating glazing is at least twice that of other options (e.g. R10 for vacuum insulating glazing vs. R3-5 for the other options). Items g and h of Section 6.4.5 have specific limited options for reach-in doors which could be misinterpreted as not including vacuum insulating glazing, so vacuum insulated glazing is specifically added.

This addendum does not affect the energy use of the standard and has no economic impact. While vacuum insulting glazing is more expensive than tradition glazing options for display doors, this is not a requirement to use vacuum insulating glazing. This proposal simply removes a barrier so that vacuum insulating glazing may be considered as an option.

2nd ISC Public Review:

The Department of Energy commented that for products in US applications, manufacturers must obtain a waiver from the department to be allowed to sell Walk-in Coolers and Walk-in Freezers that employ vacuum-insulated glazing. They asked that this information be included in the standard. This information has been included as an informative note. This is the only change in the scope of this public review.

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum cf to 90.1-2016

Modify the standard as follows (IP and SI Versions)

6.4.5 Walk-In Coolers and Walk-In Freezers

Site-assembled or site-constructed walk-in coolers and walk-in freezers shall conform to the following requirements:

…

g. Transparent reach-in doors for walk-in freezers, and windows in walk-in freezer doors, shall be of triple-pane glass, either filled with inert gas or with heat-reflective treated glass, or vacuum insulating glazing.

Informative note:

For applications in the US, alternate innovative component technologies (e.g., vacuum insulating glazing for transparent reach-in doors) are allowable only if the manufacturer has obtained a waiver from the US DOE.

h. Transparent reach-in doors for walk-in coolers, and windows in walk-in cooler doors, shall be double-pane glass with heat-reflective treated glass and gas filled, or they shall be triple pane glass, either filled with inert gas or with heat-reflective treated glass, or vacuum insulating glazing.

Informative note:

For applications in the US, alternate innovative component technologies (e.g., vacuum insulating glazing for transparent reach-in doors) are allowable only if the manufacturer has obtained a waiver from the US DOE.

…

(other portions of section not shown are unchanged)

BSR/ASHRAE/IES Addendum ck
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum ck to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Second Public Review (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Addendum ck proposed new language for Section 11 to address the new proposed renewable energy requirements in addendum BY. The proposed approach allows a proposed design that does not include renewable energy required by Section 10.5.1 a method of trade off against other prescriptive requirements in the Standard. In that case the renewable energy allowance included in the budget building design will be based on a horizontal photovoltaic array with a rated capacity equal but not to exceed the requirement in Section 10.5.1.1. For proposed designs that include an on-site renewable energy system the budget building design allowance will be based on the proposed renewable energy system design with a rated capacity equal but not to exceed the requirement in 10.5.1.1.

This proposed ISC to addendum ck addresses several public review comments. Language was added to clarify that renewable energy systems included in the Proposed Design must be modeled identically in the Baseline model except for the capacity. Performance criteria to be used when estimating on-site renewable energy when none exists in the Proposed Design have also been changed. Panel efficiency was increased to 19.1% and total system lsoses reduced to 11.3% based on a report published by NREL in November 2018, entitled "U.S. Solar Photovoltaic System Cost Benchmark: Q1 2018".

This addendum impacts an optional performance path in the standard designed to provide increased flexibility and therefore was not subjected to cost effectiveness analysis.

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum ck to 90.1-2016

Revise the Standard as follows (IP Units)

Table 11.5.1 Modeling Requirements for Calculating Design Energy Cost and Energy Cost Budget

15. On-site renewable energy	
On-site renewable energy in the *proposed design* shall be determined as follows: a. Where a complete *system* providing on-site *renewable energy* exists, the model shall reflect the actual *system* type using actual component capacities and efficiencies. b. Where a *system* providing on-site *renewable energy* has been designed, the *system* model shall be consistent with design documents. c. Where no *system* exists or is specified to provide *on-site renewable energy*, no *system* shall be modeled.	*On-site renewable energy* shall be included in the *budget building design* when required by Section 10.5.1.and shall be determined as follows: a. Where a *system* providing *on-site renewable energy* has been modeled in the *proposed design* the same *system* shall be modeled identically in the *budget building design* except the ~~with a~~ rated capacity shall meet~~ing~~ the requirements of Section 10.5.1.1. Where more than one type of *on-site renewable* energy system is modeled the total capacities shall be allocated in the same proportion as in the *proposed design*. b. Where no *system* exists or is specified to provide *on-site renewable energy in the proposed design*, *on-site renewable energy* shall be modeled as an unshaded photovoltaic system with the following physical characteristics: Size: Rated capacity per Section 10.5.1.1 Module Type: Crystalline Silicon Panel with a glass cover, ~~15%~~ 19.1%nominal efficiency and temperature coefficient of -0.47 %/°C, Performance shall be based on a reference temperature of 77°F (25°C) and irradiance of 317 Btu/ft2-hr (1,000 W/m2). Array Type: Rack mounted array with installed nominal operating cell temperature (INOCT) of 103°F (45°C). Total System losses (DC output to AC output): ~~14~~ 11.3% Tilt: 0-degrees (mounted horizontally) Azimuth:180 degrees If the *on-site renewable energy system* cannot be modeled in the *simulation program* Section 11.4.5 shall be used.

==========

BSR/ASHRAE/IES Addendum cl
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cl to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Second Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This addendum corrects the reference that allows VAV budget systems to be modeled with constant volume zones due to minimum air change requirements (such as when required by a healthcare code) and aligns the minimum airflow requirements for VAV boxes in Section 11 with the requirements in Section 6.5.2.1.

This addendum impacts an optional performance path in the standard designed to provide increased flexibility and therefore was not subjected to cost effectiveness analysis.

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum cl to 90.1-2016

Modify the standard as follows (IP and SI Units)

Table 11.5.2-1 Budget *System* Descriptions

System **No.**	***System*** **Type**	**Fan *Control***	**Cooling Type**	**Heating Type**
1	*VAV* with parallel fan-powered boxes[a]	VAV[d]	Chilled water[e]	*Electric resistance*
2	*VAV* with reheat[b]	VAV[d]	Chilled water[e]	Hot-water *fossil fuel* boiler[f]
3	Packaged *VAV* with parallel fan-powered boxes[a]	VAV[d]	Direct expansion[c]	*Electric resistance*
4	Packaged *VAV* with reheat[b]	VAV[d]	Direct expansion[c]	Hot-water *fossil fuel* boiler[f]
5	Two-pipe fan coil	Single- or two-speed fan [i,j]	Chilled water[e]	*Electric resistance*
6	Water-source heat pump	Single- or two-speed fan [i,j]	Direct expansion[c]	Electric heat pump and boiler[g]
7	Four-pipe fan-coil	Single- or two-speed fan [i,j]	Chilled water[e]	Hot-water *fossil fuel* boiler[f]
8	*Packaged terminal heat pump*	Single-speed fan[i]	Direct expansion[c]	Electric heat pump[h]

9	Packaged rooftop heat pump	Single- or two-speed fan [i,j]	Direct expansion[c]	Electric heat pump[h]
10	*Packaged terminal air conditioner*	Single-speed fan[i]	Direct expansion	Hot-water *fossil fuel* boiler[f]
11	Packaged rooftop air conditioner	Single- or two-speed fan [i,j]	Direct expansion	*Fossil fuel* furnace

....

b. ***VAV* with *Reheat*:** Minimum volume *set points* for *VAV reheat* boxes shall be the larger of the following: the minimum primary outdoor airflow rate required to meet the Simplified Procedure *ventilation* requirements of ASHRAE Standard 62.1 for the zone or the airflow rate required to comply with applicable codes or accreditation standards, including but not limited to pressure relationships or minimum air change rates.~~30% of zone peak airflow or the minimum *ventilation* rate, whichever is larger, consistent with Exception 1(a) to Section 6.5.2.1.~~ The supply air temperature for cooling shall be *reset* higher by 5°F under the minimum cooling load conditions.

….

BSR/ASHRAE/IES Addendum cp
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cp to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

Second Public Review Draft (May 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Addendum cp proposed language for Appendix G to address the new proposed renewable energy requirements in addendum by. The original proposed approach follows the method approved for the 5% renewable energy cap introduced in Addendum s that adjusted the calculation of the Performance Cost Index Target (PCI_t) for compliance with ASHRAE 90.1.

This ISC addresses comments to the 1stPRD asking that PCI_t remain independent of any renewable energy included in the Proposed Design that is not required prescriptively. The ISC also makes a change to the definition of PBP_{PRE} so that the method used to determine the prescriptive on-site renewable allowance is the same as in Section 11. These changes will allow Appendix G to continue to be used by other standards and guidelines such as ASHRAE Standard 189.1 that would have been negatively impacted by the original proposal.

This addendum impacts an optional performance path in the standard designed to provide increased flexibility and therefore was not subjected to cost effectiveness analysis.

[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by <u>underlining</u> (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum cp to 90.1-2016

Revise the Standard as follows (IP Units)

4.2.1.1 New Buildings

New *buildings* shall comply with either the provisions of

a. Section 5, "*Building Envelope*"; Section 6, "Heating, Ventilating, and Air Conditioning"; Section 7, "*Service Water Heating*"; Section 8, "Power"; Section 9, "Lighting"; and Section 10, "Other *Equipment*," or
b. Section 11, "*Energy Cost Budget* Method," or
c. Appendix G, "*Performance Rating Method*."

When using Appendix G, the Performance Cost Index (PCI) shall be less than or equal to the Performance Cost Index Target (PCI_t) when calculated in accordance with the following:

~~When using Appendix G, the Performance Cost Index (PCI) shall be less than or equal to the Performance Cost Index Target (PCI_t) when calculated in accordance with the following:~~

$$PCI_t = [BBUEC + (BPF \times BBREC) \text{ ~~– PNA~~} - PRE]/BBP$$

where

PCI = Performance Cost Index calculated in accordance with Section G1.2.

BBUEC = Baseline *Building* Unregulated *Energy* Cost, the portion of the annual *energy* cost of a *baseline building design* that is due to *unregulated energy use*.

BBREC = Baseline *Building* Regulated *Energy* Cost, the portion of the annual *energy* cost of a *baseline building design* that is due to *regulated energy use*.

BPF = *Building* Performance Factor from Table 4.2.1.1. For *building* area types not listed in Table 4.2.1.1 use "All others." Where a *building* has multiple *building* area types, the required BPF shall be equal to the area-weighted average of the *building* area types.

BBP = *Baseline Building Performance*.

PBP = Proposed Building Performance including the reduced, annual purchased energy cost associated with all~~*all*~~ *on-site renewable energy* generation systems

PBP_{nre} ~~=~~ Proposed Building Performance without any credit for reduced annual energy costs from on-site renewable energy generation systems.

PBP_{pre} = Proposed Building Performance excluding any renewable energy system in the proposed design and including an *on-site renewable energy system* that meets but not exceeds the requirements of Section 10.5.1.1 modeled following the requirements for a *budget building design* in Table 11.5.1 ~~using option b~~.

$PRE = PBP_{nre} - PBP_{pre}$

~~PNA = Proposed renewable energy contribution not allowed for compliance~~

When $(PBP_{PRE} – PBP) / BBP > 0.05$, new *buildings*, *additions* to *existing buildings* and/or *alterations* to *existing buildings* shall comply with the following:

$$PCI + [(PBP_{PRE} – PBP) / BBP] - 0.05 < PCI_t$$

Informative Note

PBP_{nre} - Proposed Building Performance No Renewable Energy
PBP_{pre} - Proposed Building Performance Prescriptive Renewable Energy
PRE - Prescriptive Renewable Energy
~~PNA – Proposed Not Allowed~~

~~Additional Renewable contribution = PBP_{nre} PBP_{pre} – PBP~~

~~Renewable Fraction = (PBP_{nre} PBP_{pre} – PBP)/BBP~~

~~If Renewable Fraction ≤ 0.05 then PNA = 0,~~
~~otherwise PNA = Additional Renewable Contribution – (0.05 x BBP)~~

==========

Section 4.2.1.1 has been previously modified by addendum s and addendum x both of which are approved for publication. If this proposal is approved for publication, the section will be appear as follows. Text that did not appear in addendum s, addendum x or in the previous sections of this draft, are shown below in strikethrough/underline:

4.2.1.1 New Buildings

New *buildings* shall comply with Sections 4.2.2 through 4.2.5 and either the provisions of

a. Section 5, "*Building Envelope*"; Section 6, "Heating, Ventilating, and Air Conditioning"; Section 7, "*Service Water Heating*"; Section 8, "Power"; Section 9, "Lighting"; and Section 10, "Other *Equipment*," or
b. Section 11, "*Energy Cost Budget* Method," or
c. Normative Appendix G, "*Performance Rating Method*."

When using Appendix G, the Performance Cost Index (PCI) of new *buildings*, *additions* to *existing buildings* and/or *alterations* to *existing buildings* shall be less than or equal to the Performance Cost Index Target (PCI_t) when calculated in accordance with the following:

$$PCI_t = [BBUEC + (BPF \times BBREC) - PRE]/BBP$$

where

PCI = Performance Cost Index calculated in accordance with Section G1.2.

BBUEC = Baseline *Building* Unregulated *Energy* Cost, the portion of the annual *energy* cost of a *baseline building design* that is due to *unregulated energy use*.

BBREC = Baseline *Building* Regulated *Energy* Cost, the portion of the annual *energy* cost of a *baseline building design* that is due to *regulated energy use*.

BPF = *Building* Performance Factor from Table 4.2.1.1. For *building* area types not listed in Table 4.2.1.1 use "All others." Where a *building* has multiple *building* area types, the required BPF shall be equal to the area-weighted average of the *building* area types.

BBP = *Baseline Building Performance*.

PBP = Proposed Building Performance including the reduced, annual purchased energy cost associated with *all on-site renewable energy* generation systems

PBP_{nre} = Proposed Building Performance without any credit for reduced annual energy costs from on-site renewable energy generation systems.

PBP_{pre-}= Proposed Building Performance excluding any renewable energy system in the proposed design and including an *on-site renewable energy system* that meets but not exceeds the requirements of Section 10.5.1.1 modeled following the requirements for a *budget building design* in Table 11.5.1.

$PRE = PBP_{nre} - PBP_{pre}$

When $(PBP_{PRE} – PBP) / BBP > 0.05$, new *buildings*, *additions* to *existing buildings* and/or *alterations* to *existing buildings* shall comply with the following:

$$PCI + [(PBP_{PRE} – PBP) / BBP] - 0.05 < PCI_t$$

Informative Note

PBP_{nre} - Proposed Building Performance No Renewable Energy
PBP_{pre} - Proposed Building Performance Prescriptive Renewable Energy
PRE - Prescriptive Renewable Energy

BSR/ASHRAE/IES Addendum cq
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cq to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

First Public Review (May 2019)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Federal regulations for ceiling fan testing have been in effect since January 23, 2017. 10 CFR Appendix U to Subpart B of Part 430, Uniform Test Method for Measuring the Energy Consumption of Ceiling Fans provides test procedures for determining the airflow and power consumption of ceiling fans. The purpose of this addendum is to ensure that the maximum fan power input is properly reported for installations both inside and outside the United States. This is addendum is similar to the current requirements for elevators in Standard 90.1 and is intended to set the stage for the future addition of ceiling fan efficiency requirements.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum cq to 90.1-2016

Modify the standard as follows (IP and SI Units)

3 Definitions, Abbreviations, and Acronyms

ceiling fan: a nonportable (*permanently installed*) device suspended from a ceiling or overhead structure for circulating air via the rotation of fan blades.

ceiling fan, large-diameter: a ceiling fan that is greater than or equal to 84.5 inches (2.15m) in diameter.

6.4.1.3 Ceiling Fans

Large-diameter ceiling fans shall be rated in accordance with 10 CFR 430 Appendix U or AMCA 230. The following data shall be provided:

a. Blade span (blade tip diameter).
b. Rated airflow and power consumption at the maximum speed.

6.4.1.3.1 The data provided shall meet one of the following requirements:

1. is determined by an independent laboratory; or
2. is included in a database published by the U.S. DOE; or
3. is certified under a program meeting the requirements of Section 6.4.1.5.

Exception to 6.4.1.3
Ceiling fans not covered in the scope of 10 CFR Part 430.

6.4.1.~~3~~4 Equipment Not Listed
Equipment not listed in the tables referenced in Sections 6.4.1.1 and 6.4.1.2 may be used.

6.4.1.4~~5~~ Verification of Equipment Efficiencies
Note to reviewer: Yes, there is a strikethrough through the 4. You just can't see it.

Equipment efficiency information supplied by *manufacturers* shall be verified by one of the following:

a. *Equipment* covered under EPACT shall comply with U.S. Department of Energy certification requirements.

b. If a certification program exists for a covered product, and it includes provisions for verification and challenge of *equipment efficiency* ratings then the product shall be listed in the certification program.

c. If a certification program exists for a covered product, and it includes provisions for verification and challenge of *equipment efficiency* ratings, but the product is not listed in the existing certification program, the ratings shall be verified by an independent laboratory test report.

d. If no certification program exists for a covered product, the *equipment efficiency* ratings shall be supported by data furnished by the *manufacturer*.

e. Where components such as indoor or outdoor coils from different *manufacturers* are used, the *system* designer shall specify component efficiencies whose combined *efficiency* meets the minimum *equipment efficiency* requirements in Section 6.4.1.

f. Requirements for plate-type liquid-to-liquid heat exchangers are listed in Table 6.8.1-8.

6.4.1.~~5~~6 Labeling

6.4.1.~~5~~6.1 Mechanical Equipment
Mechanical *equipment* that is not covered by the U.S. National Appliance Energy Conservation Act (NAECA) of 1987 shall carry a permanent label installed by the *manufacturer* stating that the *equipment* complies with the requirements of Standard 90.1.

6.4.1.~~5~~6.2 Packaged Terminal Air Conditioners
Nonstandard-size *packaged terminal air conditioners* and heat pumps with existing sleeves having an external *wall* opening of less than 16 in. high or less than 42 in. wide and having a cross-sectional area less than 670 in.2 shall be factory *labeled* as follows: *Manufactured for nonstandard-size applications only: Not to be installed in new construction projects.*

12 Normative References

Air Movement and Control Association International, Inc. (AMCA) 30 West University Drive, Arlington Heights, IL 60004-1806	
ANSI/AMCA Standard 230-15	Laboratory Methods of Testing Air Circulating Fans for Rating and Certification

NOTE TO REVIEWER: This is how the addendum will appear in the standard if it is passed as written. It includes language from addendum ao, which replaced FEG with FEI in section 6.5.3.1.3. That addendum has a list of exempted fan types that includes ceiling fans along with a description of ceiling fans. That description has been removed and replaced with the new definition.

Modify the standard as follows (IP and SI Units)

3 Definitions, Abbreviations, and Acronyms

ceiling fan: a nonportable (*permanently installed*) device suspended from a ceiling or overhead structure for circulating air via the rotation of fan blades.

ceiling fan, large-diameter: a ceiling fan that is greater than or equal to 84.5 inches (2.15m) in diameter.

6.4.1.3 Ceiling Fans

Large-diameter ceiling fans shall be rated in accordance with 10 CFR 430 Appendix U or AMCA 230. The following data shall be provided:

a. Blade span (blade tip diameter).
b. Rated airflow and power consumption at the maximum speed.

6.4.1.3.1 The data provided shall meet one of the following requirements:

1. is determined by an independent laboratory; or
2. is included in a database published by the U.S. DOE; or
3. is certified under a program meeting the requirements of Section 6.4.1.5.

Exception to 6.4.1.3
Ceiling fans not covered in the scope of 10 CFR Part 430.

6.4.1.4 Equipment Not Listed

Equipment not listed in the tables referenced in Sections 6.4.1.1 and 6.4.1.2 may be used.

6.4.1.5 Verification of Equipment Efficiencies

Equipment efficiency information supplied by *manufacturers* shall be verified by one of the following:

a. *Equipment* covered under EPACT shall comply with U.S. Department of Energy certification requirements.

b. If a certification program exists for a covered product, and it includes provisions for verification and challenge of *equipment efficiency* ratings then the product shall be listed in the certification program.

c. If a certification program exists for a covered product, and it includes provisions for verification and challenge of *equipment efficiency* ratings, but the product is not listed in the existing certification program, the ratings shall be verified by an independent laboratory test report.

d. If no certification program exists for a covered product, the *equipment efficiency* ratings shall be supported by data furnished by the *manufacturer*.

e. Where components such as indoor or outdoor coils from different *manufacturers* are used, the *system* designer shall specify component efficiencies whose combined *efficiency* meets the minimum *equipment efficiency* requirements in Section 6.4.1.

f. Requirements for plate-type liquid-to-liquid heat exchangers are listed in Table 6.8.1-8.

6.4.1.6 Labeling

6.4.1.6.1 Mechanical Equipment

Mechanical *equipment* that is not covered by the U.S. National Appliance Energy Conservation Act (NAECA) of 1987 shall carry a permanent label installed by the *manufacturer* stating that the *equipment* complies with the requirements of Standard 90.1.

6.4.1.6.2 Packaged Terminal Air Conditioners

Nonstandard-size *packaged terminal air conditioners* and heat pumps with existing sleeves having an external *wall* opening of less than 16 in. high or less than 42 in. wide and having a cross-sectional area less than 670 in.2 shall be factory *labeled* as follows: *Manufactured for nonstandard-size applications only: Not to be installed in new construction projects.*

Exceptions to 6.5.3.1.3

1. Fans that are not *embedded fans* with a motor *nameplate horsepower* of less than 1.0 hp (0.75 kW) or with a *fan nameplate electrical input power* of less than 0.89 kW.
2. *Embedded fans* and *fan arrays* with a combined motor *nameplate horsepower* of 5 hp or less or with a *fan system electrical input power* of 4.1 kW or less.
3. *Embedded fans* that are part of *equipment* listed under Section 6.4.1.1.
4. *Embedded fans* included in *equipment* bearing a third-party-certified seal for air or *energy* performance of the *equipment* package.
5. Ceiling fans~~, i.e., nonportable devices suspended from a ceiling or overhead structure for circulating air via the rotation of fan blades.~~
6. Fans used for moving gases at temperatures above 482°F (250°C).
7. Fans used for operation in explosive atmospheres.
8. Reversible fans used for tunnel ventilation.
9. Fans outside the scope of AMCA 208.
10. Fans that are intended to only operate during emergency conditions.

---

12 Normative References

Air Movement and Control Association International, Inc. (AMCA) 30 West University Drive, Arlington Heights, IL 60004-1806	
ANSI/AMCA Standard 230-15	Laboratory Methods of Testing Air Circulating Fans for Rating and Certification

BSR/ASHRAE/IES Addendum cr
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cr to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

First Public Review (May 2019)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Currently, Section 11 and Appendix G allow unlimited trade-offs between building envelope and other building systems. Studies such as "Preserving Envelope Efficiency in Performance Based Code Compliance" (PNNL-24359, BA Thornton, GP Sullivan, MI Rosenberg, MC Baechler) and "Can High-Performance Equipment Lead to a Low-Performance Building?" (D Jonlin, B Thornton, M Rosenberg) have concluded that weaker building envelopes can permanently limit building energy performance even as lighting and HVAC components are upgraded over time, because retrofitting the envelope is less likely and more expensive. This issue has been raised by states and jurisdictions around the country. A language to limit the envelope tradeoffs on projects following performance path of compliance, aka the envelope backstop, will be included in the New York City and Washington State energy codes among others.

The proposed addendum builds on this prior work, striving to preserve design flexibility and minimize documentation effort while improving the long-term building performance. Projects can comply with the proposed envelope backstop by either meeting the prescriptive envelope requirements in Section 5.5 or using Section 5.6 "Building Envelope Trade-Off Option" to demonstrate that the energy cost penalty from the proposed below-code envelope does not exceed the set margins. The backstop margins (15% for residential building area types and 7% for nonresidential building area types) were tested on projects in climate zones 2A, 4A and 6A, building types including multifamily, hotel, office, school/university and stand-alone retail, light weight and mass wall construction, with high and low window area. Examples of tested projects and the backstop compliance outcomes are shown in the table below.

Building Type	CZ	Wall Construction	WWR	Wall U-value	Window U-value	SHGC	Pass Backstop?
Multifamily	2A/4A/6A	steel frame	20%	0.124	0.65	0.68	No
Multifamily	2A/4A	mass	20%	0.189	0.65	0.68	Yes
Office	2A/4A/6A	steel frame	20%	0.124	0.65/0.45/0.45	0.68	Yes
Multifamily, N/S long axis	2A/4A/6A	steel frame	70%	0.064/0.64/0.049	0.54/0.38/0.36	0.25/0.36/0.4	Yes
Multifamily, E/W long axis	2A/4A/6A	steel frame	70%	0.064/0.64/0.049	0.54/0.38/0.36	0.25/0.36/0.4	No
Office, N/S long axis	2A/4A/6A	steel frame	70%	0.084/0.64/0.049	0.54/0.38/0.36	0.25/0.36/0.4	Yes
Office, E/W long axis	2A/4A/6A	steel frame	70%	0.084/0.64/0.049	0.54/0.38/0.36	0.25/0.36/0.4	No

It is expected that most projects following the Building Envelope Trade-Off Option will use ComCheck to document compliance with the envelope backstop, with the scope of required inputs limited to description of the proposed envelope.

This addendum impacts an optional performance path in the standard designed to provide increased flexibility and therefore was not subjected to cost effectiveness analysis.

[Note to Reviewers: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and strikethrough (for deletions) unless the instructions specifically mention some other means of indicating the changes. Only these changes are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]

Addendum cr to 90.1-2016

Revise the Standard as follows (IP Units)

11.2 Compliance

Compliance with Section 11 will be achieved if

a. all requirements of Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4 are met;

b. the *design energy cost*, as calculated in Section 11.5, does not exceed the *energy cost budget* as calculated by the *simulation program* described in Section 11.4; and

c. the *energy efficiency* level of components specified in the *building* design meet or exceed the *efficiency* levels used to calculate the *design energy cost*; and

d. One of the following is met*:*

1.The *building envelope* complies with Section 5.5, "Prescriptive Building Envelope Compliance Path"; or

2. Using Section 5.6, "Building Envelope Trade-Off Option", the *proposed envelope performance factor* shall not exceed the *base envelope performance factor* by more than 15% in multifamily, hotel/motel and dormitory *building* area types. For all other *building* area types, the limit shall be 7%. For buildings with both *residential* and *nonresidential* occupancies, the limit shall be based on the area weighted average of the *gross conditioned floor area*.

G1.2.1 Performance Rating Calculation

This *performance rating method* requires conformance with the following provisions:

a. All requirements of Sections 5.4, 6.4, 7.4, 8.4, 9.4, and 10.4 shall be met. These sections contain the mandatory provisions of the standard and are prerequisites for this rating method.

b. The interior lighting power shall not exceed the *interior lighting power allowance* determined using either Tables G3.7 or G3.8 and the methodology described in Sections 9.5.1 and 9.6.1.

c. One of the following is met*:*

1.The *building envelope* complies with Section 5.5, "Prescriptive Building Envelope Compliance Path"; or

2. Using Section 5.6, "Building Envelope Trade-Off Option", the *proposed envelope performance factor* shall not exceed the *base envelope performance factor* by more than 15% in multifamily, hotel/motel and dormitory *building* area types. For all other *building* area types, the limit shall be 7%. For buildings with both *residential* and *nonresidential* occupancies, the limit shall be based on the area weighted average of the *gross conditioned floor area*.

Note to Reviewer: Addenda AD and AI also modify the language in Section 11.2.

Addenda AD and AV also modify the language is G1.2.1.

If these addenda are published, these sections will appear as follows:

11.2 Compliance

The proposed building design shall comply with all of the following:

a. Sections 5.2.1, 6.2.1, 7.2.1., 8.2.1, 9.2.1, and 10.2.1

b. A *design energy cost*, as calculated in Section 11.5, that does not exceed the *energy cost budget* as calculated by the *simulation program* described in Section 11.4

c. The *energy efficiency* level of installed components and systems that meets or exceeds the *efficiency* levels used to calculate the *design energy cost*.

d. One of the following is met*:*

1.The *building envelope* complies with Section 5.5, "Prescriptive Building Envelope Compliance Path"; or

2. Using Section 5.6, "Building Envelope Trade-Off Option", the *proposed envelope performance factor* shall not exceed the *base envelope performance factor* by more than 15% in multifamily, hotel/motel and dormitory *building* area types. For all other *building* area types, the limit shall be 7%. For buildings with both *residential* and *nonresidential* occupancies, the limit shall be based on the area weighted average of the *gross conditioned floor area*.

e. Verification, testing, and *commissioning* requirements of Section 4.2.5 shall be met

f. Proposed *building systems*, controls, or *building envelope* documented in Section 11.7(b) that do not have criteria in Sections 5 through 10 shall have verification or testing to document proper installation and operation in accordance with Section 4.2.5.

G1.2.1 Mandatory Provisions

The proposed *building* design shall comply with all of the following:

a. Sections 5.2.1, 6.2.1, 7.2.1, 8.2.1, 9.2.1, and 10.2.1; and

b. Interior lighting power shall not exceed the *interior lighting power allowance* determined using either

1. Table G3.7 and the methodology described in Section 9.6.1, or
2. Table G3.8 and the methodology described in Section 9.5.1; and

c. One of the following is met*:*

1.The *building envelope* complies with Section 5.5, "Prescriptive Building Envelope Compliance Path"; or

2. Using Section 5.6, "Building Envelope Trade-Off Option", the *proposed envelope performance factor* shall not exceed the *base envelope performance factor* by more than 15% in multifamily, hotel/motel and dormitory *building* area types. For all other *building* area types, the limit shall be 7%. For buildings with both *residential* and *nonresidential* occupancies, the limit shall be based on the area weighted average of the *gross conditioned floor area*.

d. Energy efficiency levels of installed components and *systems* that meet or exceed the efficiency levels used to calculate the *proposed building performance*.

e. Verification, testing, and *commissioning* requirements of Section 4.2.5 shall be met.

f. Proposed *building systems*, controls or *building envelope* documented in Section G1.3(c) that do not have criteria in Sections 5 through 10 shall have verification or testing to document proper installation and operation in accordance with Section 4.2.5.

BSR/ASHRAE/IES Addendum ct
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum ct to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

First Public Review (May 2019)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

The CTI recently update ATC-105, the Acceptance Test Code for Open Circuit Cooling Towers. The major changes involved an improved specification for Wet and Dry Bulb Temperature Measuring Instruments, added a methodology for selecting the Test Period for data collection, and updated the appendices. All of the changes improve the applicability of ATC-105 for inclusion in the Standard. This Addendum updates the revision date for ATC-105 from 2000 to 2019.

In addition, the date for ATC-105S, the Acceptance Test Code for Closed Circuit Cooling Towers, was incorrect and this Addendum corrects the date for this Code to 2011.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum ct to 90.1-2016

Modify the standard as follows (IP and SI Versions)

12 Normative References

Reference	Title
Cooling Technology Institute (CTI) 3845 Cypress Creek Parkway, Suite 420, Houston, TX 77068; P.O. Box 681807	
…	
CTI ATC-105 (~~00~~19)	Acceptance Test Code for Water Cooling Towers
CTI ATC-105S (~~18~~11)	Acceptance Test Code for Closed-Circuit Cooling Towers
…	

BSR/ASHRAE/IES Addendum cu
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cu to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

First Public Review (May 2019)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

In 2010, Table 6.8.1-8 was added to ASHRAE Standard 90.1 defining requirements for plate type liquid to liquid heat exchangers, including rating units per AHRI Standard 400. When first included, Table 6.8.1-8 did not list a minimum efficiency requirement. It was thought that once the AHRI certification program became widely adopted by Industry, a minimum efficiency requirement could be defined. After further review and discussion, and considering the wide range of applications covered, it was found to not be practical to add a minimum efficiency requirement to the Table (essentially heat lost by one fluid is gained by the other fluid). The lack of a minimum efficiency in the Table also led to some confusion in the Industry regarding requirements for plate type liquid to liquid heat exchangers.

For the above reasons, this addendum will delete Table 6.8.1-8 as well as the reference to the Table in Section 6.4.1.1h, while renumbering these sections appropriately. However, the test procedure requirement for heat exchanger rating will be retained as there continues to be significant benefit to the Industry from ratings that are in compliance with AHRI 400. Therefore, this addendum will add 6.4.7 to require that liquid to liquid heat exchangers that fall under the scope of AHRI 400 be rated in accordance with AHRI 400.

Because efficiency requirements have not been modified, the only change is where the rating requirement per AHRI 400 is defined. Therefore, there is no impact on energy or cost so an economic justification for this change is not required.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by <u>underlining</u> (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum cu to 90.1-2016

Modify the standard as follows (IP and SI Units)

Revise section 6.4.1.1 as follows:

6.4.1.1 Minimum Equipment Efficiencies—Listed Equipment—Standard Rating and Operating Conditions.

…

Tables are as follows:

…

~~h. Table 6.8.1-8, "Heat Transfer *Equipment*"~~

…

Revise section 6.4.1.4 as follows:

6.4.1.4 Verification of Equipment Efficiencies

Equipment efficiency information supplied by *manufacturers* shall be verified by one of the following:

a. *Equipment* covered under EPACT shall comply with U.S. Department of Energy certification requirements.

b. If a certification program exists for a covered product, and it includes provisions for verification and challenge of *equipment efficiency* ratings then the product shall be listed in the certification program.

c. If a certification program exists for a covered product, and it includes provisions for verification and challenge of *equipment efficiency* ratings, but the product is not listed in the existing certification program, the ratings shall be verified by an independent laboratory test report.

d. If no certification program exists for a covered product, the *equipment efficiency* ratings shall be supported by data furnished by the *manufacturer*.

e. Where components such as indoor or outdoor coils from different *manufacturers* are used, the *system* designer shall specify component efficiencies whose combined *efficiency* meets the minimum *equipment efficiency* requirements in Section 6.4.1.

~~f. Requirements for plate-type liquid-to-liquid heat exchangers are listed in Table 6.8.1-8.~~

Add Section 6.4.7:

6.4.7 Liquid-to-liquid heat exchangers

Plate type liquid to liquid heat exchangers shall be rated in accordance with AHRI 400. Section 12 contains a complete specification of the referenced test procedure.

Delete table 6.8.1-8:

~~Table 6.8.1-8 Heat Transfer *Equipment* – Minimum *Efficiency* Requirements~~

~~*Equipment* Type~~	~~Subcategory~~	~~Minimum Efficiency[a]~~	~~Test Procedure[b]~~
~~Liquid-to-liquid heat exchangers~~	~~Plate type~~	~~NR~~	~~AHRI 400~~

~~a. NR = no requirement~~
~~b. Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.~~

BSR/ASHRAE/IES Addendum cv
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cv to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

First Public Review (May 2019)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This proposal updates the control requirements for parking garages in Section 9.4.1.2. There are roughly 85 million parking garage spaces in the U.S. and an estimated growth rate of 0.9% per year. When the requirements were originally included in the standard, HID light sources were still a widely used light source for parking garage lighting. HID could not be dimmed more than 30%, so the setback requirements in 9.4.1.2(b) were limited accordingly. With LED light sources, it is possible to increase the stringency of the setback requirement to 50%. The proposal also changes the control time-out from 20 minutes to 10 minutes.

9.4.1.2(c) previously required a 50% setback of lighting in the daylight transition zone during non-daylight hours. This proposal increases the stringency to require reduction to match the general illumination in the parking garage.

In the existing standard, 9.4.1.2(d) requires daylight responsive controls for lighting within 20' of the fenestration, where there is no exterior obstruction within 20'. This proposal modifies 9.4.1.2(d) to align with similar language for sidelighting daylight zones found in 9.4.1.1 (e), Exception 1. This proposal also adds an exemption for perimeter screening of the parking structure.

The proposal is cost-effective.

Baseline Source	New Source	Power Reduction	Time-out Period	Energy Savings
HID	LED	30% → 50%	20 min. to 10 min.	74%
LED	LED	30% → 50%	20 min. to 10 min.	27%

Assumptions:

- Energy: 145,000 sq. ft. parking garage with 446 spaces; 1 fixture every 2.5 spaces; facility 24-hour operation
- Fiscal: device life of 10 years; scalar ratio cooling limit of 8; initial cost of $50.00, used national average electricity rate and are cost-effective under scalar metric rules

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by <u>underlining</u> (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum cv to 90.1-2016

Modify the standard as follows (IP and SI Units)

9.4.1.2 Parking Garage Lighting Control

Lighting for parking garages shall comply with the following requirements:

a. Parking garage lighting shall have *automatic* lighting shutoff per Section 9.4.1.1 (i)

b. Lighting power of each *luminaire* shall be *automatically* reduced by a minimum of ~~30~~ 50% when there is no activity detected within a lighting zone for ~~20~~10 minutes. Lighting zones for this requirement shall be no larger than 3600 ft^2 (334 m^2).

c. Parking garage daylight transition ~~L~~lighting exempt per Section 9.2.2.3 ~~for covered vehicle entrances and exits from *buildings* and parking structures~~, shall be separately controlled to ~~by a device that~~ *automatically* reduce~~s~~ the lighting to no more than the general light level at night ~~by at least 50%~~ from sunset to sunrise.

d. The power to any *luminaires* ~~any~~ within 20 ft (6.1 m) of ~~any~~ perimeter *wall* openings totaling at least 24 ft^2 (2.2 m^2) ~~*wall* structure that has a net opening-to-*wall* ratio of at least 40% and no exterior obstructions within 20 ft.,~~ shall be *automatically* reduced through *continuous dimming* in response to available daylight. ~~by at least 50%.~~

~~Exception to~~ Exceptions to 9.4.1.2(d)

~~Lighting in the following areas is exempt:~~

1. ~~Lighting in~~ Parking garage daylight transitions ~~zones and ramps without parking~~ lighting exempt per Section 9.2.2.3.
2. Where permanent screens or architectural elements obstruct more than 50% of the opening.
3. Where the top of any existing adjacent structure or natural object is at least twice as high above the openings as its horizontal distance from the opening.

BSR/ASHRAE/IES Addendum cw
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cw to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

First Public Review (May 2019)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

BSR/ASHRAE/IES Addendum cw to ANSI/ASHRAE Standard 90.1-2016, *Energy Standard for Buildings Except Low-Rise Residential Buildings*
First Public Review Draft

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This proposal changes the daylight responsive requirements from continuous dimming **or** stepped control to continuous dimming required for all spaces. The proposal also adds a definition for continuous dimming that is very similar to the NEMA LSD-64 2014 definition.

Stepped output control currently required in the standard was written around fluorescent technology with three lamp fixtures. Lamps were switched on multiple ballasts (e.g. two lamps connected to one ballast and the third lamp connected to a second ballast with separate switches and wiring). A dimming ballast was not required. Now, dimmable LED drivers are standard in current LED technology and there are no cost implications to updating these requirements. Dimmable fluorescent ballasts are available in the market.

This proposal adds a control system characteristic to clarify how daylight responsive controls must respond during unoccupied conditions.

Table 9.6.3 Control Factors Used in Calculating Additional Interior Lighting Power Allowances is amended to eliminate the adder for continuous dimming in the secondary daylight zone.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by <u>underlining</u> (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum cw to 90.1-2016

Modify the standard as follows (IP and SI Units)

3.2 Definitions

C

…
<u>continuous dimming</u><u>: a lighting control strategy that varies the light output of a *lighting system* over a continuous range from full light output to a minimum light output in imperceptible steps without flickering.</u>

9.4.1 Lighting Control

Building lighting *controls* shall be installed to meet the provisions of Sections **9.4.1.1.**, **9.4.1.2.**, **9.4.1.3.** and 9.4.1.4.

9.4.1.1 Interior Lighting Controls

…

e. *Automatic daylight responsive controls for sidelighting:* …

The *control system* shall have the following characteristics:

1. The calibration adjustment *control* shall be located no higher than 11 ft (3.4 m) above the finished *floor*. Calibration shall not require the physical presence of a person at the sensor while it is processing.
2. The photocontrol shall reduce electric lighting power in response to available daylight using continuous dimming to 20% or less and off.

~~or with at least one *control* point between 50% and 70% of design lighting power, a second *control* point between 20% and 40% of design lighting power or the lowest dimming level the technology allows, and a third *control* point that turns off all the controlled lighting.~~

3. When an *automatic* partial OFF control has reduced the lighting power to the unoccupied setpoint in accordance with Section 9.4.1(g), the daylight responsive control shall adjust the electric light in response to available daylight, but it shall not allow the lighting power to be above the unoccupied setpoint.

~~3. The calibration shall not require the physical presence of a person at the sensor while the calibration is processing.~~

…

f. *Automatic daylight responsive controls for toplighting:* …

The *control system* shall have the following characteristics:

1. The calibration adjustment *control* shall be located no higher than 11 ft (3.4 m) above the finished *floor*. Calibration shall not require the physical presence of a person at the sensor while it is processing.

~~1.~~2. The photocontrol shall reduce electric lighting power in response to available daylight using continuous dimming to 20% or less and off. ~~or with at least one *control* point between 50% and 70% of design lighting power, a second *control* point between 20% and 40% of design lighting power or the lowest dimming level the technology allows, and a third *control* point that turns off all the controlled lighting.~~

3. When an *automatic* partial OFF control has reduced the lighting power to the unoccupied setpoint in accordance with Section 9.4.1(g), the daylight responsive control shall adjust the electric light in response to available daylight, but it shall not allow the lighting power to be above the unoccupied setpoint.

~~2. The calibration shall not require the physical presence of a person at the sensor while the calibration is processing.~~

~~3.~~4. *General lighting* in overlapping toplighted and sidelighted *daylight areas* shall be controlled together with *general lighting* in the *daylight area under skylights* or *daylight area under roof monitors*.

…

Table 9.6.3 *Control* Factors Used in Calculating Additional *Interior Lighting Power Allowance*

	***Space* Type**

Additional *Control* Method (in Addition to Mandatory Requirements)	**Open Office**	**Private Office**	**Conference Room, Meeting Room, Classroom (Lecture/ Training)**	**Retail Sales Area**	**Lobby, Atrium, Dining Area, Corridors/ Stairways, Gym/*Pool*, Mall Concourse, Parking Garage**
Manual, continuous dimming *control* or programmable multilevel dimming *control*	0.05	0.05	0.10	0.10	0
Programmable multilevel dimming *control* using programmable time scheduling	0.05	0.05	0.10	0.10	0.10
Occupancy sensors controlling the downlight component of workstation specific *luminaires* with continuous dimming to off capabilities	0.25[a]	0	0	0	0
Occupancy sensors controlling the downlight component of workstation specific *luminaires* with continuous dimming to off operation, in combination with personal continuous dimming *control* of downlight illumination by workstation occupant	0.30[a,b]	0	0	0	0
~~*Automatic continuous daylight dimming in secondary sidelighted areas*~~	~~0.10[c]~~	~~0.10[c]~~	~~0.10[c]~~	~~0.10[c]~~	~~0.10[c]~~

a. *Control* factor is limited to workstation-specific *luminaires* in partitioned single occupant work *spaces* contained within an open office environment (i.e. direct-indirect *luminaires* with separately controlled downlight and uplight components, with the downward component providing illumination to a single occupant in an open plan workstation). Within 30 minutes of the occupant leaving the *space*, the downward component shall continuously dim to off over a minimum of two minutes. Upon the occupant entering the *space*, the downward component shall turn on at the minimum level and continuously raise the illumination to a preset level over a minimum of 30 seconds. The uplight component of workstation specific *luminaire* shall comply with Section 9.4.1.1(h) (*automatic* full off).

b. In addition to the requirements described in footnote (a), the *control* shall allow the occupant to select their preferred light level via a personal computer, handheld device, or similarly accessible device located within the workstation.

c. ~~*Control* factors may not be used if *controls* are used to satisfy exceptions to Section 5.5.4.2.3~~

BSR/ASHRAE/IES Addendum cy
to ANSI/ASHRAE/IES Standard 90.1-2016

Public Review Draft

Proposed Addendum cy to Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings

First Public Review (May 2019)
(Draft Shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

ASHRAE, 1791 Tullie Circle, NE, Atlanta GA 30329-2305

BSR/ASHRAE/IES Addendum cy to ANSI/ASHRAE Standard 90.1-2016, *Energy Standard for Buildings Except Low-Rise Residential Buildings*
First Public Review Draft

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This proposal is a simple cleanup of an error in an exception to the sidelighting requirements that inadvertently set an exact measurement for an obstruction and it clarifies that the setback distance is a horizontal measurement. The exception is further amended to include natural objects as an obstruction.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum cy to 90.1-2016

Modify the standard as follows (IP and SI Units)

9.4.1 Lighting Control

Building lighting *controls* shall be installed to meet the provisions of Sections **9.4.1.1.**, **9.4.1.2.**, **9.4.1.3.** and 9.4.1.4.

9.4.1.1 Interior Lighting Controls

…

e. *Automatic daylight responsive controls for sidelighting:* …

Exception to 9.4.1.1(e)

The following areas are exempted from Section **9.4.1.1.**(e):

1. *Primary sidelighted areas* where the top of any existing adjacent structure or natural object is at least twice as high above the windows as its horizontal distance away from the windows.

…

Tracking number 60i83r1
© 2019 NSF International

Revision to NSF/ANSI/CAN 60-2018
Issue 83 Revision 1 (April 2019)

[Note – the recommended changes to the standard which include the current text of the relevant section(s) indicate deletions by use of ~~strikeout~~ and additions by gray highlighting. Rationale statements are in *italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI/CAN Standard for Drinking Water Additives -

Drinking Water Treatment Chemicals – Health Effects

.
.
.

5 Chemicals for corrosion and scale control, softening, precipitation, sequestering, and pH adjustment

5.1 Coverage

This section covers chemicals and chemical blends used in drinking water treatment for softening, remineralization, precipitation, and pH adjustment, and to control corrosion, scale, and metallic color problems.

5.2 Definitions

5.2.5 precipitation chemical: A chemical that causes a component of a solution to form an insoluble matter.

5.2.6 remineralization chemical: A chemical used to increase dissolved mineral content in water following treatment processes (e.g. reverse osmosis, distillation) for purposes of reducing corrosion from metallic and cementitious materials, stabilizing water chemistry, providing essential minerals, and for aesthetic effects.

~~**5.2.6**~~ **5.2.7 sequestering chemical**: Any compound that in aqueous solution binds with a metal or metallic ion to form a water soluble complex or chelate.

~~**5.2.7**~~ **5.2.8 softening chemical**: A chemical that either decreases or masks the presence of the dissolved concentration of calcium ion, magnesium ion, or both, in the treated water.

~~**5.2.8**~~ **5.2.9 zinc orthophosphate**: A product manufactured from orthophosphate and zinc salts. The proportion (ratio) of zinc to phosphate is variable.

Rationale: Added remineralization per 2018 DWA-TC JC meeting discussion (November 28, 2018).

Tracking number 61i146r1

Revision to NSF/ANSI/CAN 61-2018
Issue 146 Revision 1 (April 2019)

[Note – the recommended changes to the standard which include the current text of the relevant section(s) indicate deletions by use of ~~strikeout~~ and additions by gray highlighting. Rationale statements are in *italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI/CAN Standard for Drinking Water Additives -

Drinking water system components – Health effects

.
.
.

3 General requirements

3.1 General

3.1.1 Product and material information described in 3.2 shall be used to determine the specific section (4 through 9) under which a product or material shall be evaluated.

3.1.2 Products or materials whose intended uses fall under more than one section of this Standard shall be evaluated under the section with the most rigorous evaluation conditions.

3.1.3 Within the applicable section of this Standard, products shall be evaluated under the most rigorous conditions unless results from a less rigourous test can be mathematically extrapolated to ensure compliance with the most rigorous condition.

3.1.4 The most rigorous condition is associated with the shortest conditioning period, longest exposure period, highest surface area to volume ratio, and highest exposure temperature, unless demonstrated otherwise with emperical data.

~~NOTE — Rigorous conditions are typically associated with shorter conditioning periods, longer exposure periods, higher surface-area-to-volume ratios, and higher exposure temperatures.~~

Rationale: Revised to clarify that a product is required to be evaluated to the most rigorous conditions per 2018 DWA JC meeting discussion (November 29, 2018).

BSR/UL 1310, Standard for Class 2 Power Units

1. Removal of Background Marking Requirement

PROPOSAL

53.3 The markings on a tag ~~shall be printed in contrasting colors on a background other than blue or yellow and~~ shall be located on the projecting flag of a flag-type tag and shall be letters on a high contrast background such as black letters on a white background. Color combinations shall not be black on red, black on green, yellow on green, yellow on blue, or the reverse of any of these combinations.