ANSI STANDARDS ACTION

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VOL. 48, #13 *March 31, 2017*

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: April 30, 2017

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

Addenda

BSR/ASHRAE Addendum d to ANSI/ASHRAE Standard 15-2016, Safety Standard for Refrigeration Systems (addenda to ANSI/ASHRAE Standard 15 -2013)

This addendum proposes to allow Group A2L refrigerants in high probability systems for human comfort. This proposal does not change how ASHRAE Standard 15 deals with Group A2L refrigerants in industrial applications or machinery rooms. Some basic requirements for refrigerant leak detectors have been added. However, research and development of refrigerant leak detectors is continuing, and additional requirements to specify robust and reliable refrigerant leak detection may be expected.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: https://osr.ashrae.org/default.aspx

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

Addenda

BSR/ASHRAE/ICC/USGBC/IES Addendum aa to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This ISC modifies proposed addendum AA to Standard 189.1 regarding the specifications for Renewable Energy Credits (RECs). The original proposed addendum and first ISC revised the definition of RECs and modified the charging language for the Standard Renewables Approach and the Alternate Standard Renewables Approach.

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

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

Addenda

BSR/ASHRAE/ICC/USGBC/IES Addendum ad to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This ISC modifies proposed addendum AD to Standard 189.1 regarding the requirements for permanent projections (such as balconies, overhangs, or shading devices).

Click here to view these changes in full

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

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BSR/ASHRAE/ICC/USGBC/IES Addendum ag to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum creates a new definition for plants that are suitable for inclusion in the requirements for site water user reduction.

Click here to view these changes in full

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This Independent Substantive Change to Addendum ak reflects comments submitted during the first public review and reduces the number of impact categories that must show improvement in the performance metric of Section 9.5.1.1. The addendum as a whole still constitutes a significant improvement over the existing requirement in Standard 189.1.

Click here to view these changes in full

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This addendum modifies the provisions for electric vehicle charging infrastructure to include an additional option to provide electric conduit from electric service panels to parking lot spaces during new building construction.

Click here to view these changes in full

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This addendum updates the acoustical requirements of 189.1. Its development included comparison with the International Green Construction Code, Acoustical Society of America, Facilities Guideline Institute, LEED, and benefitted from the participation of ASHRAE Technical Committee TC 2.6, Sound and Vibration Control.

Click here to view these changes in full

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This proposal simplifies the application of lighting power allowances in ASHRAE 189.1 and increases their stringency, while maintaining the same provisions for illuminance.

Click here to view these changes in full

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Standard 189.1 has criteria for carbon dioxide equivalent (CO_2e) emissions.

Table 7.5.2B of the standard contains CO_2e emission rates for various energy sources including electricity and natural gas, the two energy sources predominantly used in buildings. This addendum updates the values in this table.

Click here to view these changes in full

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This addendum proposes to update the cooling tower requirements by specifying different maximum concentrations of contaminants for different cooling tower materials and simplifying the calculations for meeting the requirements.

Click here to view these changes in full

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

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BSR/ASHRAE/ICC/USGBC/IES Addendum bi to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum changes table B-5, which defines the requirements for Single Packaged Vertical Air Conditioners, Single Packaged Vertical Heat Pumps, Room Air Conditioners, and Room Air Conditioner Heat Pumps.

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

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This addendum updates the requirements in the ASHRAE 189.1-2014 standard table B-6, Warm Air Furnace and Combination Warm Air Furnaces/Air-Conditioning Units, Warm Air Duct Furnaces, and Unit Heaters.

Click here to view these changes in full

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

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This addendum adds the option of modeling district energy systems under the energy performance path in Standard 189.1 that are not wholly contained within the project site boundary.

Click here to view these changes in full

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

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BSR/ASHRAE/ICC/USGBC/IES Addendum bo to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum broadens and simplifies the existing definition of sidelighting effective aperture in Standard 189.1 in order to clarify its application in the prescriptive daylighting requirements in Section 8.4.1.2.

Click here to view these changes in full

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

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BSR/ASHRAE/ICC/USGBC/IES Addendum bp to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This proposal updates the existing requirements for the emissions or VOC content in adhesives and sealants by updating references, adding accreditation requirements for testing laboratories (without changing the emissions testing or limit requirements) and clarifying the language related to the VOC content requirements.

Click here to view these changes in full

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This proposal updates the existing requirements for the emissions or VOC content for paints and coatings materials by adding accreditation requirements for testing laboratories (without changing the emissions testing or limit requirements), clarifying the language related to the VOC contents requirements and updating references.

Click here to view these changes in full

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This proposal updates the existing requirements for the emissions for floor covering materials by adding accreditation requirements for testing laboratories (without changing the emissions testing or limit requirements), updating product categories to be consistent with CDPH/EHLB v1.1, adding a list of materials that are deemed to comply and updating references.

Click here to view these changes in full

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BSR/ASHRAE/ICC/USGBC/IES Addendum bs to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This proposal updates the existing requirements for the emissions for ceiling and wall assemblies by modifying the list of materials covered, adding a separate subsection on insulation, adding a list of materials that are deemed to comply, adding accreditation requirements for testing laboratories (without changing the emissions testing or limit requirements) and updating references.

Click here to view these changes in full

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This addendum updates requirements for building envelope airtightness testing in Standard 189.1 based on changes in ASHRAE/ANSI/IES Standard 90.1-2016.

Click here to view these changes in full

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BSR/ASHRAE/ICC/USGBC/IES Addendum bw to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum updates the requirements for table B-4 for Electrically Operated Packaged Terminal Air Conditioners, and Packaged Terminal Heat Pumps.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/ICC/USGBC/IES Addendum bx to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum makes changes to table B-8, Performance Requirements for Heat-Rejection Equipment to update some of the efficiency requirements to align with changes in the industry.

Click here to view these changes in full

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BSR/ASHRAE/ICC/USGBC/IES Addendum bz to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum updates tables in appendix B.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/ICC/USGBC/IES Addendum cb to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum clarifies the first sentence of the section on irrigation system controls.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum b 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 updated the reference for cool roof determination from CRRC-1 to CRRC-S100.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum c 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 clarifies that rooftop monitors are included in the definitions of fixed and operable metal framed vertical fenestration.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum d 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 modifies Table G3.1 1c to clarify that future work under phased permitting should comply with the current prescriptive requirements for compliance.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum e 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 clarifies that piping losses shall not be modeled in either the proposed design or budget building design when complying with Appendix G.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum f 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 requires that the capacity used for selecting the system efficiency in Appendix G represent that for the size of the actual zone instead of the size of the zones as combined into a single thermal block.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum g 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 allows for zero ventilation in accordance with Standard 62.1 -2016 in some spaces that are determined to be unoccupied by already required occupancy sensors.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum h 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 clarifies that the ERV equipment provided will meet the greater recovery requirement of either heating or cooling, unless one mode is specifically excluded for the climate zone by exception.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum i 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 adds an exception to 6.5.2.2.3b for coil-shed-type closed-circuit cooling towers with enclosed coils to no longer require bypass valves or positive closure damper.

Click here to view these changes in full

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Addenda

BSR/ASHRAE/IES Addendum j 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 addresses a possible loophole to Demand Controlled Ventilation requirements in mild climates by allowing the energy recovery exception where energy recovery is cost effective.

Click here to view these changes in full

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

Addenda

BSR/ASHRAE/IES Addendum k 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 clarifies the hotel/motel guest control occupancy requirements and changes the time-out period of unoccupied spaces from 30 to 20 minutes.

Click here to view these changes in full

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HI (Hydraulic Institute)

Revision

BSR/HI 4.1-4.6-201x, Sealless, Magnetically Driven Rotary Pumps for Nomenclature, Definitions, Application, Operation, and Test (revision of ANSI/HI 4.1-4.6-2010)

This standard covers the unique features of sealless, magnetically driven rotary pumps and includes sections on types and nomenclature; definitions; design and applications; installation, operation, and maintenance; and test. Because of the variety of rotary pump configurations available and the broad range of applications, familiarization with Hydraulic Institute Standards ANSI/HI 3.1 - 3.5, Rotary Pumps for Nomenclature, Definitions, Application and Operation; and ANSI/HI 3.6, Rotary Pump Tests, is recommended.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Tori Serazi, (973) 267 -9700, tserazi@pumps.org

HI (Hydraulic Institute)

Revision

BSR/HI 11.6-201x, Rotodynamic Submersible Pumps for Hydraulic Performance, Hydrostatic Pressure, Mechanical, and Electrical Acceptance Tests (revision of ANSI/HI 11.6-2012)

This standard applies to customer acceptance testing of submersible pumps driven by induction motors, unless otherwise agreed or specified. A submersible pump is defined as a close-coupled pump/motor unit designed to operate submerged in the pumped liquid.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Tori Serazi, (973) 267 -9700, tserazi@pumps.org

UL (Underwriters Laboratories, Inc.)

Revision

BSR/UL 746C-201x, Standard for Safety for Polymeric Materials - Use in Electrical Equipment Evaluations (revision of ANSI/UL 746C-2016)

This proposal covers considerations for parts made by Additive Manufacturing technology.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Derrick Martin, (510) 319-4271, Derrick.L.Martin@ul.com

UL (Underwriters Laboratories, Inc.)

Revision

BSR/UL 746E-201x, Standard for Safety for Polymeric Materials - Industrial Laminates, Filament Wound Tubing, Vulcanized Fibre, and Materials Used in Printed Wiring Boards (revision of ANSI/UL 746E-2017)

This covers proposed changes to the following topics based on comments received: (a) Split ANSI Grade CEM-3 into Grades CEM-3.0 and CEM-3.1; and (b) Expansion of the Ash Content Range for Types FR-4.0 and FR-4.1 in Table 8.2.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Megan Sepper, (847) 664-3411, Megan.M.Sepper@ul.com

UL (Underwriters Laboratories, Inc.)

Revision

BSR/UL 817-201X, Standard for Safety for Cord Sets and Power-Supply Cords (revision of ANSI/UL 817-2016)

Various changes to the Standard for Cord Sets and Power-Supply Cords are being proposed.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Linda Phinney, (510) 319-4297, Linda.L.Phinney@ul.com

UL (Underwriters Laboratories, Inc.)

Revision

BSR/UL 1191-201X, Standard for Components for Personal Flotation Devices (revision of ANSI/UL 1191-2013)

UL proposes an addition of automatic Inflation Systems Inadvertent Puncture requirements to UL 1191.

Click here to view these changes in full

Send comments (with copy to psa@ansi.org) to: Nicolette Allen, (919) 549-0973, Nicolette.Allen@ul.com

Comment Deadline: May 15, 2017

AA (ASC H35) (Aluminum Association)

Reaffirmation

BSR H35.5-2013 (R201x), Standard Nomenclature System for Aluminum Metal Matrix Composite Materials (reaffirmation of ANSI H35.5-2013)

The standard covers a system for designating wrought and cast aluminum metal matrix composite materials including generic temper designations.

Single copy price: Free

Obtain an electronic copy from: flicari@aluminum.org

Order from: Francesca Licari; flicari@aluminum.org

Send comments (with copy to psa@ansi.org) to: John Weritz; jweritz@aluminum.org

AA (ASC H35) (Aluminum Association)

Revision

BSR H35.2-201x, Standard Dimensional Tolerances for Aluminum Mill Products (revision of ANSI H35.2-2013)

The standard includes dimensional tolerances for aluminum mill products that are accepted and used within the aluminum industry and by users of metal.

Single copy price: Free

Obtain an electronic copy from: flicari@aluminum.org

Order from: Francesca Licari; flicari@aluminum.org

Send comments (with copy to psa@ansi.org) to: John Weritz; jweritz@aluminum.org

AA (ASC H35) (Aluminum Association)

Revision

BSR H35.2M-201x, Standard Dimensional Tolerances for Aluminum Mill Products (revision of ANSI H35.2M-2013)

The standard includes dimensional tolerances for aluminum mill products in metric terms.

Single copy price: Free

Obtain an electronic copy from: flicari@aluminum.org

Order from: Francesca Licari; flicari@aluminum.org

Send comments (with copy to psa@ansi.org) to: John Weritz; jweritz@aluminum.org

AA (ASC H35) (Aluminum Association)

Revision

BSR H35.3-201x, Standard Designation System for Aluminum Hardeners (revision of ANSI H35.3-1997 (R2013))

Covers system for designation of aluminum hardeners used primarily for the addition of alloying or grain-refining elements to aluminum alloy melts.

Single copy price: Free

Obtain an electronic copy from: flicari@aluminum.org

Order from: Francesca Licari; flicari@aluminum.org

Send comments (with copy to psa@ansi.org) to: John Weritz; jweritz@aluminum.org

AA (ASC H35) (Aluminum Association)

Revision

BSR H35.4-201x, Standard Designation System for Unalloyed Aluminum (revision of ANSI H35.4-2006 (R2013))

The standard provides a system for designating unalloyed aluminum not made by a refining process and used primarily for remelting.

Single copy price: Free

Obtain an electronic copy from: flicari@aluminum.org

Order from: Francesca Licari; flicari@aluminum.org

Send comments (with copy to psa@ansi.org) to: John Weritz; jweritz@aluminum.org

AA (ASC H35) (Aluminum Association)

Revision

BSR H35.1/H35.1(M)-201x, Standard Alloy and Temper Designation Systems for Aluminum (revision of ANSI H35.1/H35.1(M)-2013)

Covers system for designating wrought aluminum and wrought aluminum alloys, aluminum and aluminum alloys in the form of castings and foundry ingot, and tempers in which they are produced.

Single copy price: Free

Obtain an electronic copy from: flicari@aluminum.org

Order from: Francesca Licari; flicari@aluminum.org

Send comments (with copy to psa@ansi.org) to: John Weritz; jweritz@aluminum.org

AAMI (Association for the Advancement of Medical Instrumentation)

New National Adoption

BSR/AAMI/ISO 10993-1-201x, Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process (identical national adoption of ISO 10993-1 and revision of ANSI/AAMI/ISO 10993-1 -2009 (R2013))

This part of ISO 10993 describes:

- the general principles governing the biological evaluation of medical devices within a risk management process;

- the general categorization of devices based on the nature and duration of their contact with the body;

- the evaluation of existing relevant data from all sources;

- the identification of gaps in the available data set on the basis of a risk analysis;

- the identification of additional data sets necessary to analyze the biological safety of the medical device; and

- the assessment of the biological safety of the medical device.

Single copy price: Free

Obtain an electronic copy from: https://standards.aami.org/kws/public/document?document_id=11414&wg_abbrev=PUBLIC_REV

Order from: standards@aami.org

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

AAMI (Association for the Advancement of Medical Instrumentation)

New National Adoption

BSR/AAMI/ISO 13408-2-201x, Aseptic processing of health care products - Part 2: Sterilizing filtration (identical national adoption of ISO 13408-2 and revision of ANSI/AAMI/ISO 13408-2-2003 (R2013))

Specifies requirements for sterilizing filtration as part of aseptic processing of health care products. It also offers guidance to filter users concerning general requirements for selection, set up, validation and routine operation of a sterile filtration process to be used for aseptic processing of health care products. This document does not apply to removal of mycoplasma or viruses by filtration nor to filtration of whole cell vaccines.

Single copy price: Free

Obtain an electronic copy from: https://standards.aami.org/kws/groups/PUBLIC_REV/documents

Order from: Jennifer Moyer, (703) 253-8274, jmoyer@aami.org

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

ABYC (American Boat and Yacht Council)

Revision

BSR/ABYC H-5-201x, Boat Load Capacity (revision of ANSI/ABYC H-5 -2016)

This standard is a guide for determining the maximum weight and persons capacity of boats.

Single copy price: $50.00

Obtain an electronic copy from: www.abycinc.org

Order from: www.abycinc.org

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

ABYC (American Boat and Yacht Council)

Revision

BSR/ABYC H-35-201x, Powering and Load Capacity of Pontoon Boats (revision of ANSI/ABYC H-35-2011)

This standard is a guide for determining powering and load capacity of pontoon boats.

Single copy price: $50.00

Obtain an electronic copy from: www.abycinc.org

Order from: www.abycinc.org

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

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

Addenda

BSR/ASHRAE/ICC/USGBC/IES Addendum aq to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum updates requirements for functional performance testing and building systems commissioning in Standard 189.1-2014

Single copy price: $35.00

Obtain an electronic copy from: standards.section@ashrae.org

Order from: standards.section@ashrae.org

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

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

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BSR/ASHRAE/ICC/USGBC/IES Addendum bh to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum revises the efficiency requirements in ASHRAE 189.1 Table B-1, Electrical Operated Unitary Air Conditioners and Condensing Units, to adjust the efficiency metrics for industry improvements for these products.

Single copy price: $35.00

Obtain an electronic copy from: standards.section@ashrae.org

Order from: standards.section@ashrae.org

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

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

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In this addendum, changes are being made to table B-12, Electrically Operated Variable-Refrigerant-Flow (VRF) Air Conditioners Minimum Efficiency, and table B-13, Electrically Operated Variable-Refrigerant-Flow (VRF) Heat-Pump Air Conditioners Minimum Efficiency, to reflect changes made to ASHRAE 90.1 VRF efficiency requirements and to the CEE Higher Tier Specification for VRF products.

Single copy price: $35.00

Obtain an electronic copy from: standards.section@ashrae.org

Order from: standards.section@ashrae.org

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

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

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BSR/ASHRAE/ICC/USGBC/IES Addendum bl to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum updates the efficiency requirements in table B-9 to reflect changes in efficiency metrics.

Single copy price: $35.00

Obtain an electronic copy from: standards.section@ashrae.org

Order from: standards.section@ashrae.org

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

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BSR/ASHRAE/ICC/USGBC/IES Addendum bn to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum updates the soil gas control requirements in Section 8 to increase the protection of building occupants against radon exposure, specifying the key elements of effective soil gas control

Single copy price: $35.00

Obtain an electronic copy from: standards.section@ashrae.org

Order from: standards.section@ashrae.org

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

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Addenda

BSR/ASHRAE/ICC/USGBC/IES Addendum bu to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum revises the efficiency requirements in ASHRAE 189.1 Table B-2, Electrically Operated Unitary and Applied Heat Pumps Minimum Efficiency Requirements (I-P), to adjust for industry improvements in efficiency of these products.

Single copy price: $35.00

Obtain an electronic copy from: standards.section@ashrae.org

Order from: standards.section@ashrae.org

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

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

Addenda

BSR/ASHRAE/ICC/USGBC/IES Addendum bv to BSR/ASHRAE/USGBC/IES Standard 189.1-201x, Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings (addenda to ANSI/ASHRAE/USGBC/IES Standard 189.1-2014)

This addendum updates centrifugal chiller requirement for Kadj that is currently a footnote in table B3.

Single copy price: $35.00

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Addenda

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This addendum proposes revisions to the daylight requirements in Section 8.4, Prescriptive Compliance Path, and Section 8.5, Performance Compliance Path.

Single copy price: $35.00

Obtain an electronic copy from: standards.section@ashrae.org

Order from: standards.section@ashrae.org

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

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

Addenda

BSR/ASHRAE/IES Addendum bg 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 proposes to add a new simplified building method section, and this independent substantive change Public Review clarifies text needed to better understand how to comply with this compliance path of the standard.

Single copy price: $35.00

Obtain an electronic copy from: standards.section@ashrae.org

Order from: standards.section@ashrae.org

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

ASME (American Society of Mechanical Engineers)

Revision

BSR/ASME A18.1 201x, Safety Standard for Platform Lifts and Stairway Chairlifts (revision of ANSI/ASME A18.1 2014)

This safety Standard covers the design, construction, installation, operation, inspection, testing, maintenance, and repair of inclined stairway chairlifts and inclined and vertical platform lifts intended for transportation of a mobility impaired person only. The device shall have a limited vertical travel, operating speed, and platform area. Operation shall be under continuous control of the user/attendant. The device shall not penetrate more than one floor. A full passenger enclosure on the platform shall be prohibited.

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: Riad Mohamed, (212) 591 -8460, MohamedR@asme.org

ASTM (ASTM International)

New Standard

BSR/ASTM D1785-201x, Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120 (new standard)

http://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: accreditation@astm.org

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

ASTM (ASTM International)

New Standard

BSR/ASTM D2152-201x, Test Method for Adequacy of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion (new standard)

http://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: accreditation@astm.org

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

ASTM (ASTM International)

New Standard

BSR/ASTM D2241-201x, Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series) (new standard)

http://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: accreditation@astm.org

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

ASTM (ASTM International)

New Standard

BSR/ASTM F441/F441M-201x, Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80 (new standard)

http://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: accreditation@astm.org

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

ASTM (ASTM International)

New Standard

BSR/ASTM F442/F442M-201x, Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDRPR) (new standard)

http://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: accreditation@astm.org

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

ASTM (ASTM International)

New Standard

BSR/ASTM F1760-201x, Specification for Coextruded Poly(Vinyl Chloride) (PVC) Non-Pressure Plastic Pipe Having Reprocessed-Recycled Content (new standard)

http://www.astm.org/ANSI_SA

Single copy price: Free

Obtain an electronic copy from: cleonard@astm.org

Order from: Corice Leonard, (610) 832-9744, accreditation@astm.org

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

AWS (American Welding Society)

New Standard

BSR/AWS F1.6-201X, Guide for Estimating Welding Emissions for EPA and Ventilation Permit Reporting (new standard)

This document assists companies in estimating emissions from welding processes for EPA reporting purposes by choosing the simplest applicable method and following its steps. Example calculations are included.

Single copy price: $28.00

Obtain an electronic copy from: steveh@aws.org

Order from: Stephen Hedrick, (305) 443-9353, steveh@aws.org

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

AWS (American Welding Society)

Reaffirmation

BSR/AWS A5.6/A5.6M-2008 (R201x), Specification for Copper and Copper-Alloy Electrodes for Shielded Metal Arc Welding (reaffirmation of ANSI/AWS A5.6/A5.6M-2008)

This Specification prescribes the requirements for classifications of copper and copper-alloy electrodes for shielded metal arc welding. Classifications are based on chemical composition, mechanical properties, and usability of the electrodes.

Single copy price: $36.50

Obtain an electronic copy from: gupta@aws.org

Order from: Rakesh Gupta, (305) 443-9353, x 301, gupta@aws.org

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

AWS (American Welding Society)

Revision

BSR/AWS D1.3/D1.3M-201x, Structural Welding Code-Sheet Steel (revision of ANSI/AWS D1.3/D1.3M-2007)

This code contains the requirements for arc welding of structural sheet/strip steels, including cold-formed members, collectively referred to as "sheet steel," which are equal to or less than 3/16 in (0.188 in) [4.8 mm] in nominal thickness. When this code is stipulated in contract documents, conformance with all its provisions shall be required, except for those provisions that the engineer or contract documents specifically modifies or exempts.

Single copy price: $87.00

Obtain an electronic copy from: jmolin@aws.org

Order from: Jennifer Molin, (305) 443-9353, jmolin@aws.org

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

BHMA (Builders Hardware Manufacturers Association)

Revision

BSR/BHMA A156.22-201x, Door Gasketing and Edge Seal Systems (revision of ANSI/BHMA A156.22-2012)

This Standard establishes requirements for the performance and installation of gasketing systems including intumescents applied to (or mortised to) doors, frames or both. Included are performance tests intended to evaluate resistance to smoke and air infiltration, energy performance, acoustic properties, and the life and durability of gasketing materials.

Single copy price: 36.00 (Nonmembers); $18.00 (BHMA Members)

Obtain an electronic copy from: mtierney@kellencompany.com

Order from: Michael Tierney, (212) 297-2122, mtierney@kellencompany.com

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

ESTA (Entertainment Services and Technology Association)

Reaffirmation

BSR E1.14-2001 (R201x), Entertainment Technology - Recommendations for Inclusions in Fog Equipment Manuals (reaffirmation of ANSI E1.14-2001 (R2013))

The standard applies to the instruction manuals for fog-making equipment manufactured for use in the entertainment industry. Fog users must have some general knowledge of the technology, have a clear understanding of how to operate the fog system, and be aware of the potential hazards related to the use of fog and fog systems. This standard establishes guidelines for manufacturers to provide to the user the necessary information required for the safe and responsible use of fog equipment.

Single copy price: Free

Obtain an electronic copy from: http://tsp.esta.org/tsp/documents/public_review_docs.php

Order from: Karl Ruling, (212) 244-1505, standards@esta.org

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

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

New Standard

BSR/ASSE Series 21000-201x, Professional Qualifications Standard for Rainwater Catchment Systems Personnel (new standard)

This standard establishes uniform minimum requirements for qualified rainwater catchment systems installers, designers, and inspectors.

Single copy price: $60.00

Obtain an electronic copy from: marianne.waickman@asse-plumbing.org

Order from: Marianne Waickman, (708) 995-3015, marianne.waickman@asse-plumbing.org

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

IESNA (Illuminating Engineering Society of North America)

New Standard

BSR/IES RP-16-201x, Nomeclature and Definitions for Illuminating Engineering (new standard)

Essentially a reaffirmation of the RP-16-05 edition, without changes.

Single copy price: $25.00

Obtain an electronic copy from: pmcgillicuddy@ies.org

Order from: Patricia McGillicuddy, (212) 248-5000, pmcgillicuddy@ies.org

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

IESNA (Illuminating Engineering Society of North America)

Revision

BSR/IES RP-8-201x, Roadway Lighting (revision of ANSI/IES RP-8-2014)

Miscellaneous editorial corrections and the addition guidance on the use of mesopic factors research.

Single copy price: $25.00

Obtain an electronic copy from: pmcgillicuddy@ies.org

Order from: Patricia McGillicuddy, (212) 248-5000, pmcgillicuddy@ies.org

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

IIAR (International Institute of Ammonia Refrigeration)

New Standard

BSR/IIAR 6-201x, Standard for Inspection, Testing, and Maintenance of Safe Closed-Circuit Ammonia Refrigeration Systems. (new standard)

This safety standard specifies minimum requirements for inspection, testing, and maintenance of closed-circuit ammonia refrigeration systems. This standard is intended to assist individuals responsible for developing and implementing inspection, testing, and maintenance programs for facilities with stationary closed-circuit ammonia refrigeration systems using recognized and generally accepted good engineering practices (RAGAGEP).

Single copy price: $40.00, or free until review period is over

Obtain an electronic copy from: tony_lundell@iiar.org

Order from: Tony Lundell, (703) 312-4200, tony_lundell@iiar.org

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

NSF (NSF International)

Revision

BSR/NSF 50-201x (i108r2), Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities (revision of ANSI/NSF 50-201x (i108r1))

This Standard covers materials, components, products, equipment, and systems, related to public and residential recreational water facility operation.

Single copy price: Free

Obtain an electronic copy from: http://standards.nsf.org/apps/group_public/document.php?document_id=36815&wg_abbrev=jc_rwf

Order from: Lauren Panoff, (734) 769-5197, lpanoff@nsf.org

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

SCTE (Society of Cable Telecommunications Engineers)

New Standard

BSR/SCTE 217-201x, MPEG DASH Reference Architecture for IP-based Cable Services (new standard)

This MPEG DASH Reference Architecture document is to serve as informational background to a suite of specifications that define the usage of MPEG DASH in cable networks. It introduces adaptive bit rate streaming as a general service and defines reference architecture in which content processing components, flows of process, use cases, and scope definition of each part of other relevant documents are described.

Single copy price: $50.00

Obtain an electronic copy from: standards@scte.org

Order from: Global Engineering Documents, (800) 854-7179, www.global.ihs.com

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

SCTE (Society of Cable Telecommunications Engineers)

New Standard

BSR/SCTE 223-201x, Adaptive Transport Stream (new standard)

This standard describes the requirements and constraints on a single program transport stream (SPTS) that allow it to be used as an Adaptive Transport Stream, including stream conditioning and signaling of segment boundary points. Typically, multiple ATSs will be generated from a single input and sent to a packager, recorder or other device. The EBP structure can be inserted at the time of encoding or added during the transcoding process.

Single copy price: $50.00

Obtain an electronic copy from: standards@scte.org

Order from: Global Engineering Documents, (800) 854-7179, www.global.ihs.com

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

TCNA (ASC A108) (Tile Council of North America)

Revision

BSR A108.01-201x, General Requirements: Subsurfaces and Preparations by Other Trades (revision of ANSI A108.01-2016)

This specification is intended to describe the general requirements for substrates and subsurfaces and general guidelines for preparation by other trades as it relates to the installation of ceramic tile.

Single copy price: $15.00

Obtain an electronic copy from: KSimpson@tileusa.com

Order from: Katelyn Simpson, (864) 646-8453, KSimpson@tileusa.com

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

TCNA (ASC A108) (Tile Council of North America)

Revision

BSR A108.1A-201x, Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar (revision of ANSI A108.1A-2014)

This specification is intended to describe the requirements for installation of ceramic tile in the wet-set method.

Single copy price: $15.00

Obtain an electronic copy from: KSimpson@tileusa.com

Order from: Katelyn Simpson, (864) 646-8453, KSimpson@tileusa.com

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

TCNA (ASC A108) (Tile Council of North America)

Revision

BSR A108.1B-201x, Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar (revision of ANSI A108.1b-1999 (R2010))

This standard specifies the installation requirements for the installation of ceramic tile on a cured portland cement mortar setting bed with dry-set cement mortar.

Single copy price: $15.00

Obtain an electronic copy from: KSimpson@tileusa.com

Order from: Katelyn Simpson, (864) 646-8453, KSimpson@tileusa.com

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

TCNA (ASC A108) (Tile Council of North America)

Revision

BSR A108.02-201x, General Requirements: Materials, Environmental, and Workmanship (revision of ANSI A108.02-2016)

This standard outlines the requirements for delivery, storage and handling of materials at the jobsite. Also included are requirements for the installer to inspect the site prior to installation of the tile and preparation of the floor, curing the mortar bed, etc. prior to installing tile. This is the section that contains the requirements for acceptable workmanship such as consistent width of grout joints, acceptable lippage, and the types of things that are under control of the installer.

Single copy price: $15.00

Obtain an electronic copy from: KSimpson@tileusa.com

Order from: Katelyn Simpson, (864) 646-8453, KSimpson@tileusa.com

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

TCNA (ASC A108) (Tile Council of North America)

Revision

BSR A108.10-201x, Installation of Grout in Tilework (revision of ANSI A108.10-1999 (R2010))

This specification describes the minimum requirements for grouting ceramic tile with sand-portland cement grout, standard sanded cement grout, standard unsanded cement grout, polymer-modified sanded tile grout, and polymer-modified unsanded tile grout.

Single copy price: $15.00

Obtain an electronic copy from: KSimpson@tileusa.com

Order from: Katelyn Simpson, (864) 646-8453, KSimpson@tileusa.com

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

TCNA (ASC A108) (Tile Council of North America)

Revision

BSR A108.11-201x, Interior Installation of Cementitious Backer Units (revision of ANSI A108.11-2010 (R2016))

This standard describes the installation specifications for cementitious backer units (CBU's) when used as a substrate for the installation of ceramic tile in interior applications.

Single copy price: $15.00

Obtain an electronic copy from: KSimpson@tileusa.com

Order from: Katelyn Simpson, (864) 646-8453, KSimpson@tileusa.com

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

TCNA (ASC A108) (Tile Council of North America)

Revision

BSR A118.11-201x, Standard Specification for EGP (Exterior Glue Plywood) Modified Dry-Set Mortar (revision of ANSI A118.11-1999 (R2010))

This specification describes the test methods and the minimum requirements for EGP modified dry-set mortar.

Single copy price: $15.00

Obtain an electronic copy from: KSimpson@tileusa.com

Order from: Katelyn Simpson, (864) 646-8453, KSimpson@tileusa.com

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

UL (Underwriters Laboratories, Inc.)

Reaffirmation

BSR/UL 47-2004 (R201x), Standard for Safety for Semiautomatic Fire Hose Storage Devices (reaffirmation of ANSI/UL 47-2004 (R2012))

UL proposes a reaffirmation of UL 47.

Single copy price: Contact comm2000 for pricing and delivery options

Obtain an electronic copy from: http://www.comm-2000.com

Order from: comm2000

Send comments (with copy to psa@ansi.org) to: Griff Edwards, 919 549 -0956, griff.edwards@ul.com

UL (Underwriters Laboratories, Inc.)

Reaffirmation

BSR/UL 608-2012 (R201x), Standard for Safety for Burglary Resistant Vault Doors and Modular Panels (reaffirmation of ANSI/UL 608-2012)

UL proposes a reaffirmation for UL 608.

Single copy price: Contact comm2000 for pricing and delivery options

Obtain an electronic copy from: http://www.comm-2000.com

Order from: comm2000

Send comments (with copy to psa@ansi.org) to: Griff Edwards, 919 549 -0956, griff.edwards@ul.com

UL (Underwriters Laboratories, Inc.)

Reaffirmation

BSR/UL 789-2003 (R201x), Standard for Safety for Indicator Posts for Fire-Protection Service (reaffirmation of ANSI/UL 789-2003 (R2013))

UL proposes a reaffirmation of UL 789.

Single copy price: Contact comm2000 for pricing and delivery options

Obtain an electronic copy from: http://www.comm-2000.com

Order from: comm2000

Send comments (with copy to psa@ansi.org) to: Griff Edwards, 919 549 -0956, griff.edwards@ul.com

UL (Underwriters Laboratories, Inc.)

Reaffirmation

BSR/UL 2167-2011 (R201x), Standard for Safety for Water Mist Nozzles for Fire Protection Service (reaffirmation of ANSI/UL 2167-2011)

UL proposes a reaffirmation for UL 2167.

Single copy price: Contact comm2000 for pricing and delivery options

Obtain an electronic copy from: http://www.comm-2000.com

Order from: comm2000

Send comments (with copy to psa@ansi.org) to: Griff Edwards, 919 549 -0956, griff.edwards@ul.com

UL (Underwriters Laboratories, Inc.)

Reaffirmation

BSR/UL 60745-2-5-2012 (R201x), Standard for Safety for Hand-Held,Motor-Operated Electric Tools - Safety - Particular Requirements for Circular Saws (reaffirmation of ANSI/UL 60745-2-5-2012)

(1) Reaffirmation and continuance of the fifth edition of the Standard for Hand-Held, Motor-Operated Electric Tools - Safety - Particular Requirements for Circular Saws, UL 60745-2-5, as an American National Standard

Single copy price: Contact comm2000 for pricing and delivery options

Obtain an electronic copy from: http://www.comm-2000.com

Order from: comm2000

Send comments (with copy to psa@ansi.org) to: Beth Northcott, (847) 664-3198, Elizabeth.Northcott@ul.com

UL (Underwriters Laboratories, Inc.)

Revision

BSR/UL 1447-201x, Standard for Safety for Electric Lawn Mowers (revision of ANSI/UL 1447-2013)

(1) Proposed changes to and addition of requirements in UL 1447 to replace battery operated requirements with general requirements from the Standard for Battery-Powered Appliances, UL 2595.

Single copy price: Contact comm2000 for pricing and delivery options

Obtain an electronic copy from: http://www.comm-2000.com

Order from: comm2000

Send comments (with copy to psa@ansi.org) to: Beth Northcott, (847) 664-3198, Elizabeth.Northcott@ul.com

Comment Deadline: May 30, 2017

AGMA (American Gear Manufacturers Association)

New National Adoption

BSR/AGMA ISO 23509-B-201x, Bevel and Hypoid Gear Geometry (identical national adoption of ISO 23509:2016 and revision of ANSI/AGMA ISO 23509-A-2008)

This document specifies the geometry of bevel gears. The term, bevel gears, is used to mean straight, spiral, zerol bevel, and hypoid gear designs. If the text pertains to one or more, but not all, of these, the specific forms are identified. The manufacturing process of forming the desired tooth form is not intended to imply any specific process, but rather to be general in nature and applicable to all methods of manufacture.

Single copy price: $245.00

Obtain an electronic copy from: tech@agma.org

Order from: Amir Aboutaleb, (703) 684-0211, tech@agma.org

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

ASME (American Society of Mechanical Engineers)

New Standard

BSR/ASME A112.4.4-201x, Push-Fit Drain, Waste and Vent (DWV) Fittings (new standard)

This Standard covers reversible push fit drain, waste and vent fittings intended for quick assembly of IPS Schedule 40 series PVC and ABS DWV plastic pipe and fittings for applications above and below ground operating at temperatures between 32ºF (0°C) and 140ºF (60°C), and specifies requirements for materials, physical characteristics, performance testing, and markings.

Single copy price: Free

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

Send comments (with copy to psa@ansi.org) to: Angel Guzman, (212) 591-8018, guzman@asme.org

ASME (American Society of Mechanical Engineers)

Reaffirmation

BSR/ASME B89.7.3.3-2002 (R201x), Guidelines for Assessing the Reliability of Dimensional Measurement Uncertainty Statements (reaffirmation of ANSI/ASME B89.7.3.3-2002 (R2012))

This Standard provides guidance in assessing the reliability of a statement of measurement uncertainty in question.

Single copy price: $36.00

For Reaffirmations and Withdrawn standards, please view our catalog at http://www.asme.org/kb/standards.

Send comments (with copy to psa@ansi.org) to: Remington Richmond, (212) 591-8404, richmondr@asme.org

ASME (American Society of Mechanical Engineers)

Revision

BSR/ASME A112.19.10-201x, Dual Flush Devices for Water Closets (revision of ANSI/ASME A112.19.10-2003 (R2008))

This Standard establishes physical, material, testing and marking requirements for retrofit dual flush devices that are installed within gravity-type water closet tanks and have a maximum full flush volume of 4.8 Lpf (1.28 gpf) or greater volume.

Single copy price: Free

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

Send comments (with copy to psa@ansi.org) to: Angel Guzman, (212) 591-8018, guzman@asme.org

ASME (American Society of Mechanical Engineers)

Revision

BSR/ASME A112.4.14/CSA B125.3-201x, Manually Operated Valves for Use in Plumbing Systems (revision and redesignation of ANSI/ASME A112.4.14-2004 (R2010))

This Standard specifies requirements for manually operated valves, also known as supply-line stops, in sizes NPS 4 and smaller.

Single copy price: Free

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

Send comments (with copy to psa@ansi.org) to: Angel Guzman, (212) 591-8018, guzman@asme.org

Projects Withdrawn from Consideration

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:

ASTM (ASTM International)

BSR/ASTM WK54660-201x, New Guide for Reliability (new standard)

Inquiries may be directed to Corice Leonard, (610) 832-9744, accreditation@astm.org

ASTM (ASTM International)

BSR/ASTM WK54700-201x, New Specification for Plastic Mechanical Fittings for Use on Outside Diameter Controlled Polyethylene Water Service Pipe and Tubing (new standard)

Inquiries may be directed to Corice Leonard, (610) 832-9744, accreditation@astm.org

Corrections

Incorrect Price and Ordering Information

BSR/AAMI/ISO 15882-2008 (R201x)

In the March 17, 2017 Call for Comment notice for BSR/AAMI/ISO 15882 -2008 (R201x), the price and ordering information was incorrect. It has been revised to the following:

Single copy price: $104.00 (AAMI members)/ $183.00 (list)

Obtain an electronic copy from: http://my.aami.org/store/detail.aspx?id=15882-PDF

Order from: http://my.aami.org/store/detail.aspx?id=15882-PDF

Send comments (with copy to psa@ansi.org) to: Cliff Bernier, (703) 253 -8263, cbernier@aami.org

Premature Public Review Announcement

BSR/ASHRAE Addendum d to ANSI/ASHRAE Standard 15-2016

BSR/ASHRAE Addendum d to ANSI/ASHRAE Standard 15-2016 was prematurely announced as available for public review in last week's Standards Action dated March 24, 2017. The draft for Addendum d to ANSI/ASHRAE Standard 15 is now available and is re-published in this week's edition dated March 31, 2017. The comment period will close April 30, 2017.

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.

AA (ASC H35) (Aluminum Association)

Office: 1400 Crystal Drive
Suite 430
Arlington, VA 22202

Contact: *John Weritz*

Phone: (703) 358-2988

Fax: (703) 358-2961

E-mail: jweritz@aluminum.org

BSR H35.2-201x, Standard Dimensional Tolerances for Aluminum Mill Products (revision of ANSI H35.2-2013)

BSR H35.2M-201x, Standard Dimensional Tolerances for Aluminum Mill Products (revision of ANSI H35.2M-2013)

BSR H35.3-201x, Standard Designation System for Aluminum Hardeners (revision of ANSI H35.3-1997 (R2013))

BSR H35.4-201x, Standard Designation System for Unalloyed Aluminum (revision of ANSI H35.4-2006 (R2013))

BSR H35.5-2013 (R201x), Standard Nomenclature System for Aluminum Metal Matrix Composite Materials (reaffirmation of ANSI H35.5-2013)

BSR H35.1/H35.1(M)-201x, Standard Alloy and Temper Designation Systems for Aluminum (revision of ANSI H35.1/H35.1(M)-2013)

AAMI (Association for the Advancement of Medical Instrumentation)

Office: 4301 N. Fairfax Dr., Suite 301
Arlington, VA 22203

Contact: *Amanda Benedict*

Phone: (703) 253-8284

Fax: (703) 276-0793

E-mail: abenedict@aami.org

BSR/AAMI/ISO 10993-1-201x, Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process (identical national adoption of ISO 10993-1 and revision of ANSI/AAMI/ISO 10993-1-2009 (R2013))

BSR/AAMI/ISO 13408-2-201x, Aseptic processing of health care products - Part 2: Sterilizing filtration (identical national adoption of ISO 13408-2 and revision of ANSI/AAMI/ISO 13408-2-2003 (R2013))

ASSE (Safety) (American Society of Safety Engineers)

Office: 520 N. Northwest Highway
Park Ridge, IL 60068

Contact: *Tim Fisher*

Phone: (847) 768-3411

Fax: (847) 296-9221

E-mail: TFisher@ASSE.org

BSR/ASSE Z459-201X, Safety Requirements for Rope Access Systems (new standard)

BHMA (Builders Hardware Manufacturers Association)

Office: 355 Lexington Avenue
15th Floor
New York, NY 10017

Contact: *Emily Brochstein*

Phone: (212) 297-2126

Fax: (212) 370-9047

E-mail: ebrochstein@kellencompany.com

BSR/BHMA A156.22-201x, Door Gasketing and Edge Seal Systems (revision of ANSI/BHMA A156.22-2012)

CTA (Consumer Technology Association)

Office: 1919 South Eads Street
Arlington, VA 22202

Contact: *Veronica Lancaster*

Phone: (703) 907-7697

Fax: (703) 907-4197

E-mail: vlancaster@cta.tech

BSR/CTA 2068-201x, Definitions and Characteristics of Consumer Stress Monitoring Technologies (new standard)

HI (Hydraulic Institute)

Office: 6 Campus Drive
Parsippany, NJ 07054

Contact: *Tori Serazi*

Phone: (973) 267-9700

Fax: (973) 267-9055

E-mail: tserazi@pumps.org

BSR/HI 4.1-4.6-201x, Sealless, Magnetically Driven Rotary Pumps for Nomenclature, Definitions, Application, Operation, and Test (revision of ANSI/HI 4.1-4.6-2010)

BSR/HI 11.6-201x, Rotodynamic Submersible Pumps for Hydraulic Performance, Hydrostatic Pressure, Mechanical, and Electrical Acceptance Tests (revision of ANSI/HI 11.6-2012)

IESNA (Illuminating Engineering Society of North America)

Office: 120 Wall St. 17th Floor
New York, NY 10005

Contact: *Patricia McGillicuddy*

Phone: (212) 248-5000

E-mail: pmcgillicuddy@ies.org

BSR/IES RP-8-201x, Roadway Lighting (revision of ANSI/IES RP-8 -2014)

BSR/IES RP-16-201x, Nomeclature and Definitions for Illuminating Engineering (new standard)

NSF (NSF International)

Office: 789 N. Dixboro Road
Ann Arbor, MI 48105-9723

Contact: *Lauren Panoff*

Phone: (734) 769-5197

E-mail: lpanoff@nsf.org

BSR/NSF 50-201x (i108r2), Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities (revision of ANSI/NSF 50-201x (i108r1))

UL (Underwriters Laboratories, Inc.)

Office: 333 Pfingsten Road
Northbrook, IL 60062

Contact: *Beth Northcott*

Phone: (847) 664-3198

Fax: (847) 664-3198

E-mail: Elizabeth.Northcott@ul.com

BSR/UL 1447-201x, Standard for Safety for Electric Lawn Mowers (revision of ANSI/UL 1447-2013)

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.

ASA (ASC S1) (Acoustical Society of America)

Reaffirmation

ANSI/ASA S1.25-1991 (R2017), Specification for Personal Noise Dosimeters (reaffirmation and redesignation of ANSI S1.25-1991 (R2007)): 3/20/2017

ASA (ASC S12) (Acoustical Society of America)

New Standard

ANSI/ASA S12.76-2017, Methods for Measurement of Supersonic Jet Noise from Uninstalled Military Aircraft Engines (new standard): 3/27/2017

ASA (ASC S2) (Acoustical Society of America)

Reaffirmation

ANSI/ASA S2.8-2007 (R2017), Technical Information Used for Resilient Mounting Applications (reaffirmation of ANSI/ASA S2.8 -2007 (R2012)): 3/16/2017

ASABE (American Society of Agricultural and Biological Engineers)

New Standard

ANSI/ASABE S620-MAR2017, Safety for Anyhdrous Ammonia Application Equipment (new standard): 3/16/2017

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

Addenda

ANSI/ASHRAE/ASHE Addendum 170k-2016, Ventilation of Health Care Facilities (addenda to ANSI/ASHRAE Standard 170-2013): 8/1/2016

ASIS (ASIS International)

Revision

ANSI/ASIS ORM.1-2017, Security and Resilience in Organizations and their Supply Chains - Requirements with Guidance (revision, redesignation and consolidation of ANSI/ASIS/BSI BCM.01-2010, ANSI/ASIS SPC.1-2009): 3/20/2017

ASME (American Society of Mechanical Engineers)

Reaffirmation

ANSI/ASME B1.3-2007 (R2017), Screw Thread Gaging Systems for Acceptability: Inch and Metric Screw Threads (UN, UNR, UNJ, M, and MJ) (reaffirmation of ANSI/ASME B1.3-2007 (R2012)): 3/28/2017

ANSI/ASME B1.30-2002 (R2017), Screw Threads: Standard Practice for Calculating and Rounding Dimensions (reaffirmation of ANSI/ASME B1.30-2002 (R2012)): 3/28/2017

ANSI/ASME B18.2.4.3M-1979 (R2017), Metric Slotted Hex Nuts (reaffirmation of ANSI/ASME B18.2.4.3M-1979 (R2012)): 3/21/2017

ANSI/ASME B18.2.8-1999 (R2017), Clearance Holes for Bolts, Screws, and Studs (reaffirmation of ANSI/ASME B18.2.8-1999 (R2010)): 3/21/2017

ANSI/ASME B18.2.9-2010 (R2017), Straightness Gage and Gaging for Bolts and Screws (reaffirmation of ANSI/ASME B18.2.9-2010): 3/21/2017

ANSI/ASME B18.6.8-2010 (R2017), Thumb Screws and Wing Screws (Inch Series) (reaffirmation of ANSI/ASME B18.6.8-2010): 3/21/2017

ANSI/ASME B18.6.9-2010 (R2017), Wing Nuts (Inch Series) (reaffirmation of ANSI/ASME B18.6.9-2010): 3/21/2017

ANSI/ASME B18.11-1961 (R2017), Miniature Screws (reaffirmation of ANSI/ASME B18.11-1961 (R2010)): 3/21/2017

ANSI/ASME B18.22M-1981 (R2017), Metric Plain Washers (reaffirmation of ANSI/ASME B18.22M-1981 (R2010)): 3/21/2017

ANSI/ASME B18.27-1998 (R2017), Tapered and Reduced Cross Section Retaining Rings (Inch Series) (reaffirmation of ANSI/ASME B18.27-1998 (R2011)): 3/21/2017

ANSI/ASME B18.29.1-2010 (R2017), Helical Coil Screw Thread Inserts-Free Running and Screw Locking (Inch Series) (reaffirmation of ANSI/ASME B18.29.1-2010): 3/24/2017

ANSI/ASME B18.29.2M-2005 (R2017), Helical Coil Screw Thread Inserts - Free Running and Screw Locking (Metric Series) (reaffirmation of ANSI/ASME B18.29.2M-2005 (R2010)): 3/24/2017

ANSI/ASME B27.6-1972 (R2017), General Purpose Uniform Cross Section Spiral Retaining Rings (reaffirmation of ANSI/ASME B27.6 -1972 (R2011)): 3/24/2017

ANSI/ASME B27.7-1977 (R2017), General Purpose Tapered and Reduced Cross Section Retaining Rings (Metric) (reaffirmation of ANSI/ASME B27.7-1977 (R2011)): 3/24/2017

Revision

ANSI/ASME B30.13-2017, Storage/Retrieval (S/R) Machines and Associated Equipment (revision of ANSI/ASME B30.13-2011): 3/20/2017

ANSI/ASME QME-1-2017, Qualification of Active Mechanical Equipment Used in Nuclear Power Plants (revision of ANSI/ASME QME-1-2012): 3/21/2017

Withdrawal

ANSI/ASME B18.2.3.4M-2001, Metric Hex Flange Screws (withdrawal of ANSI/ASME B18.2.3.4M-2001 (R2011)): 3/28/2017

ATIS (Alliance for Telecommunications Industry Solutions)

Reaffirmation

ANSI/ATIS 0900414-2012 (R2017), Network to Customer Installation Interfaces - Enhanced 911 Analog Voicegrade PSAP Access Using Loop Reverse-Battery Signaling (reaffirmation of ANS/ATIS 0900414-2012): 3/16/2017

Stabilized Maintenance

ANSI/ATIS 0300007-2007 (S2017), Identification of Physical Network Resources (stabilized maintenance of ANSI/ATIS 0300007-2007 (R2012)): 3/27/2017

ANSI/ATIS 0900105.02-2007 (S2017), Synchronous Optical Network (SONET) - Payload Mappings (stabilized maintenance of ANSI/ATIS 0900105.02-2007 (R2012)): 3/16/2017

AWWA (American Water Works Association)

Revision

ANSI/AWWA G420-2017, Communication and Customer Relations (revision of ANSI/AWWA G420-2009): 3/27/2017

BHMA (Builders Hardware Manufacturers Association)

Revision

ANSI/BHMA A156.2-2017, Bored and Preassembled Locks and Latches (revision of ANSI/BHMA A156.2-2011): 3/21/2017

* ANSI/BHMA A156.13-2017, Mortise Locks and Latches (revision of ANSI/BHMA A156.13-2012): 3/20/2017

CSA (CSA Group)

Reaffirmation

* ANSI Z21.61-1983 (R2017), Gas-Fired Toilets (reaffirmation of ANSI Z21.61-1983 (R2013)): 3/20/2017

ECIA (Electronic Components Industry Association)

Revision

ANSI/EIA 364-25E-2017, Probe Damage Test Procedure for Electrical Connectors (revision and redesignation of ANSI/EIA 364-25D-2010): 3/28/2017

IAPMO (Z) (International Association of Plumbing & Mechanical Officials)

Reaffirmation

* ANSI/CSA B45.11/IAPMO Z401-2011 (R2017), Glass plumbing fixtures (reaffirmation of ANSI/CSA B45.11/IAPMO Z401-2011): 3/20/2017

ICC (ASC A117) (International Code Council)

Revision

ANSI/ICC A117.1-2017, Accessible and Usable Buildings and Facilities (revision of ANSI/ICC A117.1-2009): 3/28/2017

IEEE (Institute of Electrical and Electronics Engineers)

New Standard

ANSI/IEEE 810-2015, Standard for Hydraulic Turbine and Generator Shaft Couplings and Shaft Runout Tolerances (new standard): 3/16/2017

ANSI/IEEE 1707-2015, Recommended Practice for the Investigation of Events at Nuclear Facilities (new standard): 3/16/2017

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

New National Adoption

INCITS/ISO/IEC 28360:2015 (2017), Information technology - Office equipment - Determination of chemical emission rates from electronic equipment (identical national adoption of and revision of INCITS/ISO/IEC 28360:2012 [2013]): 3/28/2017

INCITS/ISO/IEC 29102:2015 (2017), Information technology - Office equipment - Method for the determination of ink cartridge photo yield for colour printing with inkjet printers and multi-function devices that contain inkjet printer components (identical national adoption of and revision of INCITS/ISO/IEC 29102:2011 [2012]): 3/28/2017

NEMA (ASC C119) (National Electrical Manufacturers Association)

Revision

ANSI C119.1-2016, Electric Connectors - Sealed Insulated Underground Connector Systems Rated 600 V (revision of ANSI C119.1-2011): 3/16/2017

NEMA (ASC C18) (National Electrical Manufacturers Association)

Revision

* ANSI C18.1M, Part 2-2017, Standard for Portable Primary Cells and Batteries with Aqueous Electrolyte-Safety Standard (revision of ANSI C18.1M, Part 2-2011): 3/28/2017

NSF (NSF International)

Revision

* ANSI/NSF 46-2017 (i29r1), Evaluation of components and devices used in wastewater treatment systems (revision of ANSI/NSF 46 -2016): 3/12/2017

* ANSI/NSF 61-2017 (i127r2), Drinking Water System Components - Health effects (revision of ANSI/NSF 61-2016): 3/13/2017

PMI (Project Management Institute)

Revision

ANSI/PMI 99-001-2017, The Standard for Project Management (revision of ANSI/PMI 99-001-2013): 3/21/2017

RMA (Rubber Manufacturers Association)

New Standard

ANSI/RMA B28.1-2017, Safety Specifications for Mills and Calenders in the Rubber Industry (new standard): 3/27/2017

SMACNA (Sheet Metal and Air-Conditioning Contractors' National Association)

New Standard

ANSI/SMACNA 011-2017, Thermoset FRP Duct Construction Manual (new standard): 3/27/2017

TCNA (ASC A108) (Tile Council of North America)

New Standard

ANSI A326.3-2017, Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials (new standard): 3/22/2017

TIA (Telecommunications Industry Association)

Revision

ANSI/TIA 1183-A-2017, Measurement Methods and Test Fixtures for Balun-less Measurements of Balanced Components and Systems (revision and redesignation of ANSI/TIA 1183-2012): 3/28/2017

UL (Underwriters Laboratories, Inc.)

Reaffirmation

* ANSI/UL 103-2012 (R2017), Standard for Safety for Factory-Built Chimneys for Residential Type and Building Heating Appliances (reaffirmation of ANSI/UL 103-2012): 3/15/2017

ANSI/UL 181A-2013 (R2017), Standard for Closure Systems for Use with Rigid Air (reaffirmation of ANSI/UL 181A-2013): 3/22/2017

ANSI/UL 181B-2013 (R2017), Standard for Closure Systems for Use with Flexible Air Ducts and Air Connectors (reaffirmation of ANSI/UL 181B-2013): 3/21/2017

ANSI/UL 305-2012a (R2017), Standard for Safety for Panic Hardware (reaffirmation of ANSI/UL 305-2012a): 3/22/2017

ANSI/UL 710-2012 (R2017), Standard for Exhaust Hoods for Commercial Cooking Equipment (reaffirmation of ANSI/UL 710 -2012): 3/22/2017

ANSI/UL 810A-2012 (R2017), Standard for Safety for Electrochemical Capacitors (reaffirmation of ANSI/UL 810A-2012): 3/28/2017

ANSI/UL 1046-2012 (R2017), Standard for Grease Filters for Exhaust Ducts (reaffirmation of ANSI/UL 1046-2012): 3/22/2017

* ANSI/UL 1727-2012 (R2017), Standard for Safety for Commercial Electric Personal Grooming Appliances (Proposal dated 1-20-17) (reaffirmation of ANSI/UL 1727-2012): 3/13/0117

Revision

* ANSI/UL 749-2017, Standard for Safety for Household Dishwashers (revision of ANSI/UL 749-2013): 3/16/2017

* ANSI/UL 749-2017a, Standard for Safety for Household Dishwashers (Proposal dated 10-7-16) (revision of ANSI/UL 749-2013): 3/16/2017

ANSI/UL 1066-2017, Standard for Safety for Low-Voltage AC and DC Power Circuit Breakers Used in Enclosures (revision of ANSI/UL 1066-2016): 3/22/2017

* ANSI/UL 1082-2017, Standard for Safety for Household Electric Coffee Makers and Brewing Type Appliances (Proposals dated 9/30/16) (revision of ANSI/UL 1082-2016): 3/24/2017

* ANSI/UL 1082-2017a, Standard for Safety for Household Electric Coffee Makers and Brewing Type Appliances (Proposals dated 11/25/16) (revision of ANSI/UL 1082-2016): 3/24/2017

* ANSI/UL 1678-2017, Standard for Safety for Household, Commercial, and Institutional-Use Carts, Stands and Entertainment Centers for Use with Audio and/or Video Equipment (revision of ANSI/UL 1678 -2016c): 3/24/2017

ANSI/UL 2225-2017, Standard for Safety for Cables and Cable-Fittings for Use in Hazardous (Classified) (Proposal dated 11-25-16) (revision of ANSI/UL 2225-2016): 3/24/2017

ANSI/UL 2225-2017a, Standard for Safety for Cables and Cable-Fittings for Use in Hazardous (Classified) (Proposal dated 01-27-17) (revision of ANSI/UL 2225-2016): 3/24/2017

ANSI/UL 3730-2017, Standard for Photovoltaic Junction Boxes (revision of ANSI/UL 3730-2014): 3/27/2017

VC (ASC Z80) (The Vision Council)

Revision

ANSI Z80.28-2016, Methods of Reporting Optical Aberrations of Eyes (revision of ANSI Z80.28-2009): 3/27/2017

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. To view information about additional standards for which a PINS has been submitted and to search approved ANS, please visit www.NSSN.org, which is a database of standards information. Note that this database is not exhaustive.

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.

ASABE (American Society of Agricultural and Biological Engineers)

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BSR/ASAE S584.4 MONYEAR-201x, Agricultural Equipment: Speed Identification Symbol (SIS) (revision and redesignation of ANSI/ASAE S584.3-2013)

Stakeholders: Implement manufacturers and users.

Project Need: Add requirement to use the Speed Identification Symbol (SIS) on all towed implements.

The scope of this standard is primarily directed to identifying agricultural equipment that have been designed in their original equipment configuration for specified ground speeds greater than 40 km/h (25 mile/h) but under 65 km/h (40 mile/h), and for all towed machines of any speed. Applies to self-propelled, semi-integra,l and towed equipment moving on public roads and identifies the maximum equipment ground speed based on the ground speed design capability of the specified piece of equipment.

ASME (American Society of Mechanical Engineers)

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Contact: *Mayra Santiago*
Fax: (212) 591-8501
E-mail: ansibox@asme.org

BSR/ASME B89.1.9-201x, Gage Blocks (revision of ANSI/ASME B89.1.9-2002 (R2012))

Stakeholders: Laboratories that calibrate gage blocks, manufacturers.

Project Need: The standard will incorporate errata from 2012, content and ideas from B89.7 documents, and concepts from B89.1.2.

This Standard specifies the most important design and metrological characteristics of gage blocks with a rectangular or square cross-section and a nominal length (ln) ranging from 0.1 mm to 1 000 mm for metric sizes and 0.004 in. to 40 in. for inch sizes.

ASSE (Safety) (American Society of Safety Engineers)

Office: 520 N. Northwest Highway
Park Ridge, IL 60068
Contact: *Tim Fisher*
Fax: (847) 296-9221
E-mail: TFisher@ASSE.org

BSR/ASSE Z459-201X, Safety Requirements for Rope Access Systems (new standard)

Stakeholders: Occupational safety professionals working with rope access systems.

Project Need: Based upon the consensus of the Z359 Membership and the leadership of ASSE.

This standard sets forth accepted practices for rope access work. It is applicable for use in any environment where ropes are suspended from or connected to a structure or natural feature and used as the primary means of access, egress or support and as the primary means of secondary protection against a fall. This standard is not intended to apply to recreational use of ropes or to methods used by professional emergency response personnel, although persons engaged in such activities may benefit from the advice, principles, and practices herein. This is the same project as the originally proposed Z359.8 standard but the committee decided to change the numbering.

ASTM (ASTM International)

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West Conshohocken, PA 19428-2959
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Fax: (610) 834-3683
E-mail: accreditation@astm.org

BSR/ASTM WK58249-201x, New Guide for Reliability (new standard)

Stakeholders: Reliability industry.

Project Need: Specify methods for use in reliability calculations.

https://www.astm.org/DATABASE.CART/WORKITEMS/WK58249.htm

AWS (American Welding Society)

Office: 8669 NW 36th Street
#130
Miami, FL 33166

Contact: *John Douglass*

E-mail: jdouglass@aws.org

BSR/AWS B1.10M/B1.10-201x, Guide for the Nondestructive Examination of Welds (revision of ANSI/AWS B1.10M/B1.10-2016)

Stakeholders: Welding industry.

Project Need: Revising content to reflect current industry usage.

This guide acquaints the user with the nondestructive examination methods commonly used to examine weldments. The standard also addresses which method best detects various types of discontinuities. The methods included are visual, liquid penetrant, magnetic particle, radiographic, ultrasonic, electromagnetic (eddy current), and leak testing.

BSR/AWS B1.11M/B1.11-201x, Guide for the Visual Examination of Welds (revision of ANSI/AWS B1.11M/B1.11-2014)

Stakeholders: Welding industry.

Project Need: Revising content to reflect current industry usage.

This guide contains information to assist in the visual examination of welds. Included are sections on fundamentals, surface conditions, and equipment. Sketches and full-color photographs illustrate weld discontinuities commonly found in welds.

CSA (CSA Group)

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Cleveland, OH 44131

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E-mail: cathy.rake@csagroup.org

* BSR Z21.88-201x, Vented Gas Fireplace Heaters (same as CSA 2.33 -201x) (revision of ANSI Z21.88-2016)

Stakeholders: Consumers, manufacturers, gas suppliers, certifying agencies.

Project Need: Revise standard for safety.

Test and examination criteria for vented gas fireplace heaters for use with natural and propane gas, which allows the view of flames and provides the simulation of a solid fuel fireplace and furnishes warm air to the space in which it is installed with or without duct connections. A vented gas-fired fireplace heater is designed to comply with minimum thermal efficiency requirements and may be controlled by an automatic thermostat. Direct-vent appliances may be installed in manufactured (mobile) homes and recreational vehicles.

BSR/CSA C22.2 No. 19085-1-201x, Woodworking machines - Safety - Part 1: Common requirements (identical national adoption of ISO 19085-1)

Stakeholders: Woodworking machinery manufacturers, regulators, inspectors.

Project Need: To adopt the recently published ISO standards on woodworking machinery to support the woodworking industry.

This standard gives the safety requirements and measures to reduce risks related to woodworking machines arising during operation, adjustment, maintenance, transport, assembly, dismantling, disabling and scrapping - common to machines used in the woodworking industry. It is applicable to woodworking, stationary, and displaceable machines when they are used as intended and under conditions foreseen by the manufacturer. It is intended to be used in conjunction with other parts of ISO 19085, applicable to specific machine types. It is not applicable to machines intended for use in potential explosive atmospheres or machines manufactured prior to the date of its publication.

BSR/CSA C22.2 No. 19085-2-201x, Woodworking machines - Safety - Part 2: Horizontal beam panel circular sawing machines (identical national adoption of ISO 19085-2)

Stakeholders: Woodworking machinery manufacturers, regulators, inspectors.

Project Need: To adopt the recently published ISO standards and support the woodworking machinery industry.

This standard gives the safety requirements for horizontal beam panel circular sawing machines with the saw carriage of the front cutting line mounted below the work-piece support, which are manually or powered loaded and/or manually unloaded, hereinafter referred to as “machines.” This standard deals with all significant hazards, hazardous situations and events, relevant to the machines when they are operated, adjusted, and maintained as intended and under the conditions foreseen by the manufacturer, including reasonably foreseeable misuse. Also, transport, assembly, dismantling, disabling, and scrapping phases have been taken into account.

BSR/CSA C22.2 No. 19085-3-201x, Woodworking machines - Safety requirements - Part 3: Numerically controlled (NC) boring and routing machines (identical national adoption of ISO 19085-3)

Stakeholders: Woodworking machinery manufacturers, regulators, inspectors.

Project Need: To adopt the recently published ISO standards and support the woodworking machinery industry.

This standard gives the safety requirements and measures for stationary NC boring machines, NC routing machines and NC combined boring/routing machines (as defined in 3.1 of the standard), hereinafter referred to as “machines.” It deals with all significant hazards, hazardous situations and events as listed in Clause 4, relevant to the machines, when operated, adjusted, and maintained as intended, and under the conditions foreseen by the manufacturer including reasonably foreseeable misuse. Also, transport, assembly, dismantling, disabling, and scrapping phases have been taken into account.

BSR/CSA C22.2 No. 19085-5-201x, Woodworking machines - Safety - Part 5: Dimension saws (identical national adoption of ISO 19085-5)

Stakeholders: Woodworking machinery manufacturers, regulators, inspectors.

Project Need: To adopt the recently published ISO standards and support the woodworking machinery industry.

This part of ISO 19085 gives the safety requirements for stationary and displaceable dimension saws, hereinafter referred to as “machines,” designed to cut wood and material with similar physical characteristics to wood. This part of ISO 19085 deals with all significant hazards, hazardous situations and events, as listed in Clause 4, relevant to the machines when they are operated, adjusted, and maintained as intended and under the conditions foreseen by the manufacturer including reasonably foreseeable misuse. Transport, assembly, dismantling, disabling, and scrapping phases have also been taken into account.

CTA (Consumer Technology Association)

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* BSR/CTA 2068-201x, Definitions and Characteristics of Consumer Stress Monitoring Technologies (new standard)

Stakeholders: Consumers, health and fitness device manufacturers and users.

Project Need: To create a standard defines terms related to stress and stress indicators that are relevant for stress monitoring technologies.

This standard defines terms related to stress and stress indicators that are relevant for stress monitoring technologies. Additionally, where appropriate, it describes performance standards for the measurement of stress-related characteristics by consumer stress-monitoring technologies.

ESTA (Entertainment Services and Technology Association)

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Suite 609
New York, NY 10036-3748

Contact: *Karl Ruling*

Fax: (212) 244-1502

E-mail: standards@esta.org

BSR E1.46-201x, Recommended Practice for the Prevention of Falls from Theatrical Stages and Raised Performance Platforms (revision of ANSI E1.46-2016)

Stakeholders: Theatrical performers, technicians, facility managers and planners, and members of the public who have occasion to walk on a theater or concert stage.

Project Need: The users of theatrical stages and raised platforms can suffer debilitating injuries from falls into orchestra pits, open stage lifts, and similar openings in stage floors. Health and safety regulations require action to prevent these falls, but offer little guidance that is suitable for theatrical environments. This document provides that guidance. The consensus body has decided to revise this standard due to recent changes in 29 CFR 1910 subpart D.

This Standard offers guidance to people working in the entertainment industry on preventing falls by performers, technicians, and members of the public from theatrical stages and raised performance platforms into orchestra pits, into audience areas, into stage traps, and from raised surfaces to surfaces that are lower. Its guidance is intended to be applied to stages and raised platforms used for performance of a show or event to an audience.

HL7 (Health Level Seven)

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Suite 227
Ann Arbor, MI 48104

Contact: *Karen Van Hentenryck*

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BSR/HL7 V3 AB, R2-2008 (R201x), HL7 Version 3 Standard: Accounting & Billing,Release 2 (reaffirmation of ANSI/HL7 V3 AB, R2-2008 (R2012))

Stakeholders: Healthcare.

Project Need: Standard has reached its 5-year anniversary.

The HL7 Version 3 Accounting & Billing Message standard supports the communication of acquired patient payer information and specific acquired charges for services to a patient/payer billing system. Examples of services facilitated by this standard include the creation and management of patient billing accounts and the posting of financial transactions against patient billing accounts to aggregate financial transactions that will be submitted as claims or invoices for reimbursement.

BSR/HL7 V3 CGPED, R1-2007 (R201x), HL7 Version 3 Standard: Clinical Genomics; Pedigree, Release 1 (reaffirmation of ANSI/HL7 V3 CGPED, R1-2007 (R2012))

Stakeholders: Healthcare, healthcare providers, software vendors, genetic research, laboratories that perform genetic testing.

Project Need: Standard has reached its 5-year anniversary.

Pedigree is a data standard for transmitting family health histories between systems. This includes describing a patient's full pedigree with diseases and conditions, and the option to link genetic data and risk analysis, with the ability for use by clinical decision support. The Pedigree model is mentioned as an acceptable standard in the US Meaningful Use Stage 2 and 3 requirements.

BSR/HL7 V3 CR, R4-2008 (R201x), HL7 Version 3 Standard: Claims and Reimbursement, Release 4 (reaffirmation of ANSI/HL7 V3 CR, R4-2008 (R2012))

Stakeholders: Healthcare.

Project Need: Standard has reached its 5-year anniversary.

The Claims and Reimbursement Domain covers eligibility, prior authorization, pre-determination, claims, and remittance transactions between billing systems and payers.

IEEE (ASC N42) (Institute of Electrical and Electronics Engineers)

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BSR N42.13-201x, Calibration and Usage of Dose Calibrator Ionization Chambers for the Assay of Radionuclides (new standard)

Stakeholders: Radioactivity source manufacturers, nuclear medicine users, research organizations.

Project Need: Provides the technique for quantification of the activity of identified radionuclides using any of a variety of ionization chambers currently available for this purpose.

Covers the technique for quantification of activity of identified radionuclides using a variety of ionization chambers currently available for this purpose. Application is limited to instruments that incorporate well-type ionization chambers as detectors. Provides method for obtaining measurements accurate to within ±10% and reproducible to within ±5% [usually for sources of more than 100 mCi (3.7´106 Bq)]; is intended to assure continuing performance of apparatus within these specifications.

IEST (Institute of Environmental Sciences and Technology)

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BSR/ISO 14644-13-201x, Cleanrooms and associated controlled environments - Part 13: Cleaning of surfaces to achieve defined levels of cleanliness in terms of particle and chemical classifications (identical national adoption of ISO/FDIS 14644-13)

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

Project Need: This document gives guidance on the selection of cleaning methods to achieve specified cleanliness levels. Most of the methods are suitable for removal of more than one contamination category at the same time; therefore, a common standard for the selection of a cleaning method for both particles, as well as chemical contamination, is needed.

This document gives guidelines for cleaning to a specified degree on cleanroom surfaces, surfaces of equipment in a cleanroom and surfaces of materials in a cleanroom. Under consideration are all surfaces (external or internal) that are of interest. It provides guidance on the assessment of cleaning methods for achieving the required surface cleanliness by particle concentration (SCP) and surface cleanliness by chemical concentration (SCC) classes and which techniques should be considered to achieve these specified levels.

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

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BSR N14.33-201x, Characterizing Damaged Spent Nuclear Fuel for the Purpose of Storage and Transport (new standard)

Stakeholders: Organizations that deal with the storage and transport of damaged spent nuclear fuel.

Project Need: Assists organizations that deal with damaged spent nuclear fuel for storage and transport

This standard defines terms related to dry storage and transport of damaged light water reactor spent nuclear fuel. It establishes procedures for identifying, categorizing, and managing damaged fuel. The standard provides: methods for identifying and classifying damaged and undamaged spent nuclear fuel assemblies; preparation and handling requirements for damaged spent nuclear fuel assemblies for dry storage and transport; requirements for record keeping and quality assurance; and specifies the requirements for canning damaged fuel assemblies.

ISDI (ASC MH2) (Industrial Steel Drum Institute)

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E-mail: snauman@industrialpackaging.org

BSR MH2-201x, Materials Handling (Containers) - Steel Drums (new standard)

Stakeholders: Steel drum manufacturers, purchasers and fillers of such containers, reconditioning and reuse interests, military, third-party distributors, and logistics companies.

Project Need: First revision since 2004.

Revision of standard for metal drums having a volume of 16-gallons (61-liters) or greater, to include terminology, dimensions, construction requirements, materials, and procedures.

UL (Underwriters Laboratories, Inc.)

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Fremont, CA 94538

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BSR/UL 3003-201X, Standard for Safety for Distributed Generation Cables (new standard)

Stakeholders: Cable manufacturers, City of Los Angeles, CA.

Project Need: First edition consensus standard.

The requirements cover multi-conductor, nonintegrally jacketed, distributed generation (DG) cable. The cable is intended for use with specific distributed generation equipment/devices such as photovoltaic modules, inverters, solar trackers, etc. DG Cable is suitable for use between cable trays and utilization. These cables are constructed with or without: one bare or one or more insulated grounding conductor(s), and/or one or more twisted pairs used for signal or communication, all under an overall jacket.

UL (Underwriters Laboratories, Inc.)

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Research Triangle Park, NC 27709-3995

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BSR/UL 2900-2-3-201X, Standard for Software Cybersecurity for Network- Connected Products - Part 2-3: Particular Requirements for Security and Life Safety Signaling Systems and Equipment (new standard)

Stakeholders: Security consultants and practitioners, information security stakeholders, IT officers, security and life safety risk assessment professionals, insurance underwriters, manufacturers of security and life safety equipment and systems, manufacturers of software, central station alarm services, security and life safety product and system end users.

Project Need: To obtain national recognition of a standard covering requirements regarding the vendor's risk management process for products used in security and life safety signaling systems; methods by which a product's software shall be evaluated and tested for the presence of vulnerabilities, software weaknesses malware; and requirements regarding the establishment and testing of security risk controls in the architecture and design of a product.

The document encompasses and describes requirements regarding the vendor's risk management process for products used in security and life safety signaling systems; methods by which a product's software shall be evaluated and tested for the presence of vulnerabilities, software weaknesses malware; and requirements regarding the establishment & testing of security risk controls in the architecture and design of a product. The requirements leverage the requirements of UL 2900-1, with additional requirements that take into consideration security and life safety signaling systems and equipment context, environment, reliability, and safety concerns.

VC (ASC Z80) (The Vision Council)

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* BSR Z80.31-201x, Ophthalmic Optics - Specifications for Ready-to-Wear Near-Vision Spectacles (revision of ANSI Z80.31-2012)

Stakeholders: Manufacturers of over-the-counter ready-to-wear near-vision spectacles, eyecare professionals (e.g., ophthalmologists, optometrists, opticians) who recommend such eyewear to their patients.

Project Need: This Standard specifies the minimum requirements for complete ready-to-wear near-vision spectacles with positive power available directly to the public without the prescription of a licensed professional.

This Standard specifies the minimum requirements for complete ready-to-wear near-vision spectacles with positive power available directly to the public without the prescription of a licensed professional.

WMA (World Millwork Alliance)

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New Port Richey, FL 34655

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E-mail: jferris@worldmillworkalliance.com

* BSR/WMA 100-201x, Standard Method of Determining Structural Performance Ratings of Side-Hinged Exterior Door Systems and Procedures for Component Substitution (revision of ANSI/WMA 100 -2016)

Stakeholders: The Side Hinged Exterior Door industry, which includes component manufacturers, door pre-hangers, distributors, home builders, regulators, industry-related associations, testing and certification agencies.

Project Need: Required 5-year revision cycle. Proposed revisions are being considered at this time.

The WMA 100 provides a structural design pressure rating for a side-hinged exterior door system (SHEDS) using the ASTM E330 test method. Once a rating is obtained, the standard defines methods for qualifying door system components for substitution in the rated system. Slab stiffness testing is used and outlined in this standard as a means to qualify components.

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)
- AAMVA (American Association of Motor Vehicle Administrators)
- AGA (American Gas Association)
- AGSC (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 (The Green Building Initiative)
- GEIA (Greenguard Environmental Institute)
- HL7 (Health Level Seven)
- IESNA (The Illuminating Engineering Society of North America)
- MHI (ASC MH10) (Material Handling Industry)
- NAHBRC (NAHB Research Center, Inc.)
- NBBPVI (National Board of Boiler and Pressure Vessel Inspectors)
- NCPDP (National Council for Prescription Drug Programs)
- NISO (National Information Standards Organization)
- NSF (NSF International)
- PRCA (Professional Ropes Course Association)
- RESNET (Residential Energy Services Network)
- 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.

AA (ASC H35)
Aluminum Association

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AAMI
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ABYC
American Boat and Yacht Council

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Phone: (410) 990-4460
Web: www.abycinc.org

AGMA
American Gear Manufacturers Association

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Alexandria, VA 22314-1587
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Web: www.agma.org

ASA (ASC S1)
Acoustical Society of America

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ASA (ASC S12)
Acoustical Society of America

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ASA (ASC S2)
Acoustical Society of America

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ASABE
American Society of Agricultural and Biological Engineers

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

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ASIS
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ASME
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ASSE (Safety)
American Society of Safety Engineers

520 N. Northwest Highway
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ASTM International

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ATIS
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AWS
American Welding Society

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AWWA
American Water Works Association

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BHMA
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CSA
CSA Group

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CTA
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ECIA
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ESTA
Entertainment Services and Technology Association

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HI
Hydraulic Institute

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Phone: (973) 267-9700
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Web: www.pumps.org

HL7
Health Level Seven

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IAPMO (ASSE Chapter)
ASSE International Chapter of IAPMO

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IAPMO (Z)
International Association of Plumbing & Mechanical Officials

5001 E. Philadelphia Street
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Fax: (909) 472-4178
Web: www.iapmort.org

ICC
International Code Council

4051 West Flossmoor Road
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Fax: (708) 799-0320
Web: www.iccsafe.org

IEEE
Institute of Electrical and Electronics Engineers (IEEE)

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IEEE (ASC N42)
Institute of Electrical and Electronics Engineers

445 Hoes Lane
Piscataway, NJ 08855-1331
Phone: 732-562-3817
Web: standards.ieee.org

IESNA
Illuminating Engineering Society of North America

120 Wall St. 17th Floor
New York, NY 10005
Phone: (212) 248-5000
Web: www.iesna.org

IEST
Institute of Environmental Sciences and Technology

2430 S. Arlington Heights Road
Suite 620
Arlington Heights, IL 60005
Phone: (847) 981-0100
Fax: (847) 981-4130
Web: www.iest.org

IIAR
International Institute of Ammonia Refrigeration

1001 North Fairfax Street
Alexandria, VA 22314
Phone: (703) 312-4200
Fax: (703) 312-0065
Web: www.iiar.org

INMM (ASC N14)
Institute of Nuclear Materials Management

75 North 200 East
Oak Ridge National Laboratory
Richmond, UT 84333
Phone: (435) 258-3730
Web: www.inmm.org

ISDI (ASC MH2)
Industrial Steel Drum Institute

P.O. Box 790
Severna Park, MD 21146-0790
Phone: (410) 703-7778
Fax: (410) 544-0385
Web: www.whysteeldrums.org

ITI (INCITS)
InterNational Committee for Information Technology Standards

1101 K Street, NW
Suite 610
Washington, DC 20005-3922
Phone: (202) 626-5737
Fax: (202) 638-4922
Web: www.incits.org

NEMA (ASC C12)
National Electrical Manufacturers Association

1300 North 17th Street
Suite 900
Rosslyn, VA 22209
Phone: (703) 841-3227
Fax: (703) 841-3327
Web: www.nema.org

NSF
NSF International

789 N. Dixboro Road
Ann Arbor, MI 48105-9723
Phone: (734) 769-5197
Web: www.nsf.org

PMI (Organization)
Project Management Institute

14 Campus Blvd
Newtown Square, PA 19073-3299
Phone: (313) 404-3507
Fax: (610) 356-4647
Web: www.pmi.org

RMA
Rubber Manufacturers Association

1400 K Street, NW
Suite 900
Washington, DC 20005
Phone: (202) 682-4866
Web: www.rma.org

SCTE
Society of Cable Telecommunications Engineers

140 Philips Rd
Exton, PA 19341
Phone: (800) 542-5040
Fax: (800) 542-5040
Web: www.scte.org

SMACNA
Sheet Metal and Air-Conditioning Contractors' National Association

4201 Lafayette Center Drive
Chantilly, VA 20151-1209
Phone: (703) 803-2980
Fax: (703) 803-3732
Web: www.smacna.org

TCNA (ASC A108)
Tile Council of North America

100 Clemson Research Blvd.
Anderson, SC 29625
Phone: (864) 646-8453
Fax: (864) 646-2821
Web: www.tileusa.com

TIA
Telecommunications Industry Association

1320 North Courthouse Road
Suite 200
Arlington, VA 22201
Phone: (703) 907-7706
Fax: (703) 907-7727
Web: www.tiaonline.org

UL
Underwriters Laboratories, Inc.

12 Laboratory Drive
Research Triangle Park, NC 27709
-3995
Phone: (919) 549-0921
Fax: (919) 549-0921
Web: www.ul.com

VC (ASC Z80)
The Vision Council

225 Reinekers Lane, Suite 700
Alexandria, VA 22314
Phone: (703) 740-1094
Web: www.z80asc.com

WMA
World Millwork Alliance

10047 Robert Trent Jones Parkway
New Port Richey, FL 34655
Phone: (727) 372-3665
Fax: (727) 372-2879
Web: www.worldmillworkalliance.com

ISO Draft International Standards

This section lists proposed standards that the International Organization for Standardization (ISO) is 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 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). The final date for offering comments is listed after each draft.

Ordering Instructions

ISO Drafts can be made available by contacting ANSI's Customer Service department. Please e-mail your request for an ISO 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.

ACOUSTICS (TC 43)

ISO/DIS 17208-2, Underwater acoustics - Quantities and procedures for description and measurement of underwater noise from ships - Part 2: Determination of source levels from deep water measurements - 4/13/2017, $88.00

AIRCRAFT AND SPACE VEHICLES (TC 20)

ISO/DIS 18322, Space systems - General management requirements for space test centres - 3/24/2017, $93.00

CONTROL AND SAFETY DEVICES FOR NON INDUSTRIAL GAS-FIRED APPLIANCES AND SYSTEMS (TC 161)

ISO/DIS 23550, Safety and control devices for gas and/or oil burners and appliances - General requirements - 4/12/2017, $134.00

DENTISTRY (TC 106)

ISO/DIS 28158, Dentistry - Integrated dental floss and handles - 4/14/2017, $58.00

ISO/DIS 28319, Dentistry - Laser welding - 5/14/2017, $58.00

ISO/DIS 10139-1, Dentistry - Soft lining materials for removable dentures - Part 1: Materials for short-term use - 6/14/2017, $58.00

IEC/DIS 80601-2-60, Medical electrical equipment - Part 2-60: Particular requirements for basic safety and essential performance of dental equipment, $98.00

FIRE SAFETY (TC 92)

ISO/DIS 26367-1, Guidelines for assessing the adverse environmental impact of fire effluents - Part 1: General - 6/10/2017, $77.00

GEOGRAPHIC INFORMATION/GEOMATICS (TC 211)

ISO 19157/DAmd1, Geographic information - Data quality - Amendment 1: Describing data quality using coverages - 4/16/2017, $40.00

ISO 19115-1/DAmd1, Geographic information - Metadata - Part 1: Fundamentals - Amendment 1 - 4/14/2017, $40.00

ISO/DIS 19101-2, Geographic information - Reference model - Part 2: Imagery - 4/12/2017, $155.00

MACHINE TOOLS (TC 39)

ISO/DIS 19085-12, Woodworking machines - Safety - Part 12: Tenoning/profiling machines - 6/8/2017, $134.00

MECHANICAL VIBRATION AND SHOCK (TC 108)

ISO 10816-8/DAmd1, Mechanical vibration - Evaluation of machine vibration by measurements on non-rotating parts - Part 8: Reciprocating compressor systems - Amendment 1 - 6/14/2017, $46.00

ISO/DIS 18095, Condition monitoring and diagnostics of power transformers - 4/14/2017, $125.00

ISO/DIS 29821, Condition monitoring and diagnostics of machines - Ultrasound - General guidelines, procedures and validation - 4/15/2017, $93.00

MEDICAL DEVICES FOR INJECTIONS (TC 84)

ISO/DIS 20698, Catheter systems for neuraxial application - Sterile and single-use catheters and accessories - 4/12/2017, $77.00

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS (TC 283)

ISO/DIS 45001, Occupational health and safety management systems - Requirements with guidance for use - 5/14/2017, $112.00

OPTICS AND OPTICAL INSTRUMENTS (TC 172)

ISO/DIS 17123-5, Optics and optical instruments - Field procedures for testing geodetic and surveying instruments - Part 5: Total stations - 4/14/2017, $98.00

OTHER

ISO/DIS 3690, Welding and allied processes - Determination of hydrogen content in arc weld metal - 6/11/2017, $88.00

ISO/DIS 8249, Welding - Determination of Ferrite Number (FN) in austenitic and duplex ferritic-austenitic Cr-Ni stainless steel weld metals - 6/11/2017, $93.00

PLASTICS (TC 61)

ISO/DIS 20457, Plastics moulded parts - Tolerances and acceptance conditions - 6/14/2017, $98.00

ISO/DIS 21844, Cellular plastic - Cellulose foam thermal insulation - Material specification - 4/13/2017, $46.00

PLASTICS PIPES, FITTINGS AND VALVES FOR THE TRANSPORT OF FLUIDS (TC 138)

ISO/DIS 21225-1, Plastics piping systems for the trenchless replacement of underground pipeline networks - Part 1: Replacement on the line by pipe bursting and pipe extraction - 6/14/2017, $77.00

ISO/DIS 21225-2, Plastics piping systems for the trenchless replacement of underground pipeline networks - Part 2: Replacement off the line by horizontal directional drilling and impact moling - 6/14/2017, $77.00

POWDER METALLURGY (TC 119)

ISO/DIS 4490, Metallic powders - Determination of flow rate by means of a calibrated funnel (Hall flowmeter) - 4/16/2017, $40.00

ISO/DIS 4506, Hardmetals - Compression test - 6/11/2017, $40.00

PUMPS (TC 115)

ISO/ASME DIS 14414, Pump system energy assessment - 6/15/2017, $125.00

QUALITY MANAGEMENT AND QUALITY ASSURANCE (TC 176)

ISO/DIS 9004, Quality management - Quality of an organization - Guidance to achieve sustained success - 6/9/2017, $125.00

ISO/DIS 10005, Quality management systems - Guidelines for quality plans - 6/14/2017, $93.00

ROAD VEHICLES (TC 22)

ISO/DIS 12251, Diesel engines - Clamp mounted CR fuel injectors - Mounting dimensions - 3/25/2017, $53.00

ISO/DIS 16332, Diesel engines - Fuel filters - Method for evaluating fuel/water separation efficiency - 3/25/2017, $119.00

ISO/DIS 12103-3, Road vehicles - Test contaminants for filter evaluation - Part 3: Soot aerosol - 6/11/2017, $67.00

RUBBER AND RUBBER PRODUCTS (TC 45)

ISO/DIS 1853, Conducting and dissipative rubbers - Vulcanized or thermoplastic - Measurement of resistivity - 4/12/2017, $62.00

ISO/DIS 3949, Plastics hoses and hose assemblies - Textile-reinforced types for hydraulic applications - Specification - 5/11/2017, $62.00

ISO/DIS 13226, Rubber - Standard reference elastomers (SREs) for characterizing the effect of liquids on vulcanized rubbers - 6/15/2017, $102.00

SHIPS AND MARINE TECHNOLOGY (TC 8)

ISO/DIS 21984, Ships and marine technology - Guidelines for measurement, evaluation and reporting of vibration with regard to habitability on specific ships - 6/14/2017, $53.00

SUSTAINABLE DEVELOPMENT IN COMMUNITIES (TC 268)

ISO/DIS 37106, Sustainable development and communities - Guide to establishing strategies for smart cities and communities - 6/11/2017, $119.00

ISO/DIS 37120, Sustainable development in communities - Indicators for city services and quality of life - 6/11/2017, $165.00

TIMBER STRUCTURES (TC 165)

ISO/DIS 9709, Structural timber - Visual strength grading - Basic principles - 4/12/2017, $98.00

ISO/DIS 13912, Structural timber - Machine strength grading - Basic principles - 4/12/2017, $88.00

TRANSPORT INFORMATION AND CONTROL SYSTEMS (TC 204)

ISO/DIS 17419, Intelligent transport systems - Cooperative systems - Globally unique identification - 6/15/2017, $125.00

ISO/DIS 17423, Intelligent transport systems - Cooperative systems - Application requirements and objectives - 6/15/2017, $112.00

ISO/DIS 22418, Intelligent transport systems - Fast service announcement protocol (FSAP) - 6/16/2017, $93.00

TYRES, RIMS AND VALVES (TC 31)

ISO/DIS 9413, Tyre valves - Dimensions and designation - 6/8/2017, $175.00

WATER QUALITY (TC 147)

ISO/DIS 13169, Water quality - Uranium - Test method using alpha liquid scintillation counting - 4/12/2017, $67.00

ISO/DIS 16266-2, Water quality - Detection and enumeration of Pseudomonas aeruginosa - Part 2: Most probable number method - 4/16/2017, $125.00

WATER RE-USE (TC 282)

ISO/DIS 20761, Water reuse in urban areas - Guidelines for water reuse safety evaluation: assessment parameters and methods - 6/9/2017, $93.00

WELDING AND ALLIED PROCESSES (TC 44)

ISO/DIS 18592, Resistance welding - Destructive testing of welds - Method for the fatigue testing of multi-spot-welded specimens - 4/13/2017, $107.00

ISO/IEC JTC 1, Information Technology

ISO/IEC DIS 24770-5, Information technology -Real-time locating system (RTLS) device performance test methods - Part 5: Test methods for chirp spread spectrum (CSS) air interface - 4/16/2017, $46.00

ISO/IEC DIS 29109-5, Information technology - Conformance testing methodology for biometric data interchange formats defined in ISO/IEC 19794 - Part 5: Face image data - 6/15/2017, $82.00

ISO/IEC DIS 30107-2, Information technology - Biometric presentation attack detection - Part 2: Data formats - 3/23/2017, $82.00

ISO/IEC DIS 19823-13, Information technology - Conformance test methods for security service crypto suites - Part 13: Cryptographic Suite Grain-128A - 4/14/2017, $93.00

QUALITY MANAGEMENT AND CORRESPONDING GENERAL ASPECTS FOR MEDICAL DEVICES (TC 210)

ISO/IEC DGuide 63, Guide to the development and inclusion of aspects of safety in international standards for medical devices - 5/3/2017, $68.00

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 15872:2017, Aerospace - UNJ threads - Gauging, $138.00

ISO 12604-1:2017, Aircraft ground handling - Checked baggage - Part 1: Mass and dimensions, $45.00

BANKING AND RELATED FINANCIAL SERVICES (TC 68)

ISO 13491-2:2017, Financial services - Secure cryptographic devices (retail) - Part 2: Security compliance checklists for devices used in financial transactions, $185.00

CONCRETE, REINFORCED CONCRETE AND PRE-STRESSED CONCRETE (TC 71)

ISO 13315-4:2017, Environmental management for concrete and concrete structures - Part 4: Environmental design of concrete structures, $68.00

CORROSION OF METALS AND ALLOYS (TC 156)

ISO 6509-2:2017, Corrosion of metals and alloys - Determination of dezincification resistance of copper alloys with zinc - Part 2: Assessment criteria, $45.00

EARTH-MOVING MACHINERY (TC 127)

ISO 15818:2017, Earth-moving machinery - Lifting and tying-down attachment points - Performance requirements, $138.00

FERROUS METAL PIPES AND METALLIC FITTINGS (TC 5)

ISO 9349:2017, Ductile iron pipes, fittings, accessories and their joints - Thermal preinsulated products, $68.00

FIREWORKS (TC 264)

ISO 25947-1:2017, Fireworks - Categories 1, 2 and 3 - Part 1: Terminology, $45.00

ISO 25947-2:2017, Fireworks - Categories 1, 2 and 3 - Part 2: Categories and types, $68.00

ISO 25947-3:2017, Fireworks - Categories 1, 2 and 3 - Part 3: Minimum labelling requirements, $162.00

ISO 25947-4:2017, Fireworks - Categories 1, 2 and 3 - Part 4: Test methods, $162.00

ISO 25947-5:2017, Fireworks - Categories 1, 2 and 3 - Part 5: Requirements for construction and performance, $138.00

GAS CYLINDERS (TC 58)

ISO 10297/Amd1:2017, Gas cylinders - Cylinder valves - Specification and type testing - Amendment 1: Pressure drums and tubes, $19.00

GLASS IN BUILDING (TC 160)

ISO 12540:2017, Glass in building - Tempered soda lime silicate safety glass, $162.00

IRON ORES (TC 102)

ISO 13312:2017, Iron ores - Determination of potassium - Flame atomic absorption spectrometric method, $103.00

MECHANICAL TESTING OF METALS (TC 164)

ISO 12106:2017, Metallic materials - Fatigue testing - Axial-strain-controlled method, $185.00

NON-DESTRUCTIVE TESTING (TC 135)

ISO 20339:2017, Non-destructive testing - Equipment for eddy current examination - Array probe characteristics and verification, $138.00

ISO 20484:2017, Non-destructive testing - Leak testing - Vocabulary, $45.00

OPTICS AND OPTICAL INSTRUMENTS (TC 172)

ISO 16331-1:2017, Optics and optical instruments - Laboratory procedures for testing surveying and construction instruments - Part 1: Performance of handheld laser distance meters, $185.00

PAINTS AND VARNISHES (TC 35)

ISO 16773-4:2017, Electrochemical impedance spectroscopy (EIS) on coated and uncoated metallic specimens - Part 4: Examples of spectra of polymer-coated and uncoated specimens, $185.00

PLAIN BEARINGS (TC 123)

ISO 12132:2017, Plain bearings - Quality assurance of thin-walled half bearings - Design FMEA, $68.00

ISO 12302:2017, Plain bearings - Quality characteristics - Statistical process control (SPC), $45.00

PLASTICS (TC 61)

ISO 19929:2017, Plastics - Determination of average molecular mass and mixture ratio of poly(ethylene glycol) and its derivatives by MALDI-TOF-MS, $103.00

ISO 15023-1:2017, Plastics - Poly(vinyl alcohol) (PVAL) materials - Part 1: Designation system and basis for specifications, $68.00

SHIPS AND MARINE TECHNOLOGY (TC 8)

ISO 18154:2017, Ships and marine technology - Safety valve for cargo tanks of LNG carriers - Design and testing requirements, $68.00

SPORTS AND RECREATIONAL EQUIPMENT (TC 83)

ISO 10256-5:2017, Protective equipment for use in ice hockey - Part 5: Neck laceration protectors for ice hockey players, $138.00

SPRINGS (TC 227)

ISO 19690-1:2017, Disc springs - Part 1: Calculation, $103.00

ISO Technical Specifications

HYDROGEN ENERGY TECHNOLOGIES (TC 197)

ISO/TS 19883:2017, Safety of pressure swing adsorption systems for hydrogen separation and purification, $103.00

ISO/IEC JTC 1, Information Technology

ISO/IEC 14496-5/Amd42:2017, Information technology - Coding of audio-visual objects - Part 5: Reference software - Amendment 42: Reference software for the alternative depth information SEI message extension of AVC, $19.00

OTHER

ISO/IEC 80079-20-2/Cor1:2017, Explosive atmospheres - Part 20-2: Material characteristics - Combustible dusts test methods - Corrigendum, FREE

ISO/IEC 80079-20-2:2016, Explosive atmospheres - Part 20-2: Material characteristics - Combustible dusts test methods, $232.00

IEC Standards

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

IEC 60154-4 Ed. 2.0 b:2017, Flanges for waveguides - Part 4: Relevant specifications for flanges for circular waveguides, $117.00

IEC 61169-11 Ed. 1.0 en:2017, Radio-frequency connectors - Part 11: Sectional specification for RF coaxial connectors with inner diameter of outer conductor 9,5 mm with threaded coupling - Characteristic impedance 50 ohms (Type 4,1-9,5), $164.00

ELECTRICAL ACCESSORIES (TC 23)

IEC 61084-1 Ed. 2.0 b:2017, Cable trunking systems and cable ducting systems for electrical installations - Part 1: General requirements, $281.00

IEC 61084-2-1 Ed. 2.0 b:2017, Cable trunking systems and cable ducting systems for electrical installations - Part 2-1: Particular requirements - Cable trunking systems and cable ducting systems intended for mounting on walls and ceilings, $164.00

IEC 61084-2-2 Ed. 2.0 b:2017, Cable trunking systems and cable ducting systems for electrical installations - Part 2-2: Particular requirements - Cable trunking systems and cable ducting systems intended for mounting underfloor, flushfloor, or onfloor, $235.00

IEC 61084-2-3 Ed. 1.0 b:2017, Cable trunking systems and cable ducting systems for electrical installations - Part 2-3: Particular requirements - Slotted cable trunking systems intended for installation in cabinets, $117.00

IEC 61084-2-4 Ed. 2.0 b:2017, Cable trunking systems and cable ducting systems for electrical installations - Part 2-4: Particular requirements - Service poles and service posts, $235.00

INDUSTRIAL-PROCESS MEASUREMENT AND CONTROL (TC 65)

IEC 61010-2-201 Ed. 2.0 b:2017, Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2 -201: Particular requirements for control equipment, $352.00

S+ IEC 61010-2-201 Ed. 2.0 en:2017 (Redline version), Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-201: Particular requirements for control equipment, $457.00

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES (TC 61)

IEC 60335-2-38 Ed. 5.2 b:2017, Household and similar electrical appliances - Safety - Part 2-38: Particular requirements for commercial electric griddles and griddle grills, $322.00

IEC 60335-2-38 Amd.2 Ed. 5.0 b:2017, Amendment 2 - Household and similar electrical appliances - Safety - Part 2-38: Particular requirements for commercial electric griddles and griddle grills, $82.00

SECONDARY CELLS AND BATTERIES (TC 21)

IEC 61951-2 Ed. 4.0 b:2017, Secondary cells and batteries containing alkaline or other non acid electrolytes - Secondary sealed cells and batteries for portable applications - Part 2: Nickel-metal hydride, $281.00

S+ IEC 61951-2 Ed. 4.0 en:2017 (Redline version), Secondary cells and batteries containing alkaline or other non acid electrolytes - Secondary sealed cells and batteries for portable applications - Part 2: Nickel-metal hydride, $366.00

ULTRASONICS (TC 87)

IEC 62127-2 Ed. 1.2 b:2017, Ultrasonics - Hydrophones - Part 2: Calibration for ultrasonic fields up to 40 MHz, $762.00

IEC 62127-2 Amd.2 Ed. 1.0 b:2017, Amendment 2 - Ultrasonics - Hydrophones - Part 2: Calibration for ultrasonic fields up to 40 MHz, $82.00

IEC Technical Reports

FIBRE OPTICS (TC 86)

IEC/TR 62343-6-10 Ed. 1.0 en:2017, Dynamic modules - Part 6-10: Design guide - Intermediate controller for multiple dynamic module systems, $82.00

IEC Technical Specifications

ELECTRICAL ACCESSORIES (TC 23)

IEC/TS 63066 Ed. 1.0 en:2017, Low-voltage docking connectors for removable energy storage units, $281.00

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 ANS 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 and 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.

ANSI Accredited Standards Developers

Approval of Reaccreditation

American Nuclear Society (AMS)

The reaccreditation of the American Nuclear Society (ANS), an ANSI Member and Accredited Standards Developer, has been approved at the direction of ANSI's Executive Standards Council under its recently revised operating procedures for documenting consensus on ANS-sponsored American National Standards, effective March 29, 2017. For additional information, please contact: Ms. Patricia Schroeder, Standards Manager, American Nuclear Society, 555 N. Kensington Avenue, La Grange Park, IL 60526; phone: 708.579.8269; e-mail: pschoeder@ans.org.

ANSI Accreditation Program for third Party Product Certification Agencies

Voluntary withdrawal from ANSI Accreditation – GlobalG.A.P. Scopes

AgroManagement

Comment Deadline: April 30, 2017

Inge Jochumsen
AgroManagement
Osterbro 4, Tommerup
DK 5690, Denmark
E-mail: http://www.agfocert.com
Web: ibj@agromanagement.dk

On March 27th 2017, AgroManagement, voluntarily withdrew from ANSI accreditation from the following scopes:

GLOBALG.A.P Standards, V5;

GlobalG.A.P. Compound Feed Manufacturing (CFM)

GlobalG.A.P. General Regulations Integrated Farm Assurance: Option 1 - Individual Producer Certification

Aquaculture Base: crustaceans

Aquaculture Base: finfish

Aquaculture Base: molluscs

Aquaculture Base: Others

GlobalG.A.P. General Regulations Integrated Farm Assurance: Option 2 - Producer Group Certification

Aquaculture Base: crustaceans

Aquaculture Base: finfish

Aquaculture Base: molluscs

Aquiculture Base: Others

Please send your comments by April 30, 2017 to Reinaldo Balbino Figueiredo, Senior Program Director, Product Certifier Accreditation, American National Standards Institute, 1899 L Street, NW, 11th Floor, Washington, DC 20036, Fax: 202-293-9287 or e-mail: rfigueir@ansi.org, or Nikki Jackson, Director, Product Certifier Accreditation, American National Standards Institute, 1899 L Street, NW, 11th Floor, Washington, DC 20036, Fax: 202-293-9287 or e-mail: njackson@ansi.org.

International Organization for Standardization (ISO)

Call for U.S. TAG Administrator

ISO/TC 228 – Tourism and related services

There is currently no ANSI-accredited U.S. TAG Administrator for ISO/TC 228 and therefore ANSI is not a member of this committee. The Secretariat for the committee is held by Spain (UNE).

ISO/TC 228 operates under the following scope:

> Standardization of the terminology and specifications of the services offered by tourism service providers, including related activities, touristic destinations and the requirements of facilities and equipment used by them, to provide tourism buyers, providers and consumers with criteria for making informed decisions.

Organizations interested in serving as the U.S. TAG Administrator or participating on a U.S. TAG should contact ANSI's ISO Team (isot@ansi.org).

Meeting Notice

U.S.TAG to TC 301 – Energy Management and Energy Savings

The U.S. TAG to TC 301 Energy Management and Energy Savings will be meeting at ARCADIS U.S. Located at 50 Fountain Plaza, Suite 600 Buffalo, NY 14202. The dates of the meeting are May 2-4, 2017.

The meeting will be to review the international comments on documents including ISO CD3 50001, ISO CD 50008, and other related TC 301 documents in order to finalize the U.S. positions for the upcoming Working Group meetings and plenary in Beijing, China, May 29 – June 2, 2017.

Anyone interested in attending should contact Deann Desai at deann.desai@gatech.edu or Melody McElwee at melody.mcelwee@innovate.gatech.edu.

BSR/ASHRAE Addendum d
ANSI/ASHRAE Standard 15-2016

Second Public Review Draft

Safety Standard for Refrigeration Systems

Second Public Review (January 2017)
(Draft shows Proposed Changes to Current Standard and changes pursuant to comments from the First Public Review)

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.

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FOREWORD

The 2010 edition of ASHRAE Standard 34 added an optional Subclass 2L to the existing Class 2 flammability classification of refrigerants. Several refrigerants, including single component fluids and blends, have been classified as Subclass 2L (refer to ANSI/ASHRAE Standard 34-2013 and subsequent addenda). Use of Subclass 2L refrigerants currently requires compliance with Class 2 requirements per ASHRAE Standard 15 (either 2010 or 2013 edition as applicable to any given jurisdiction).

In July of 2011, ASHRAE SSPC 15 published the first Advisory Public Review draft with proposed changes related to Subclass 2L. In October of 2015 a second Advisory Public Review draft was published. In July 2016, Addendum d was published for purposes of a First Public Review. The committee appreciates the many comments that were received during these reviews, and the technical issues identified. The Committee reviewed each comment and provided responses to the Commenters. This Second Public Review draft incorporates changes that are responsive to the First Public Review comments as appropriate.

This addendum proposes to allow Group A2L refrigerants in high-probability systems for human comfort only. This proposal does not change how ASHRAE Standard 15 deals with Group A2L refrigerants in industrial applications or machinery rooms. Those topics are expected to be handled in a separate addendum proposal.

This addendum modifies portions of Standard 15 to incorporate class 2L flammability classification as defined in ASHRAE Standard 34-2013. This addendum is contingent on a Continuous Maintenance Proposal submitted to ASHRAE SSPC 34 to make 2L a flammability class rather than a sub-class, and to define A2L and B2L as safety groups. Also, this addendum makes use of LFL values that will be published in an addendum to ASHRAE 34. Note that equations given in this addendum use the IP and SI units for LFL that are expected to be publish in that addendum.

Refrigerant leak detection of Class 2L refrigerants, and air movement to enable rapid mixing of leaked refrigerant, are at the core of the requirements presented in this addendum. Recall that the RCL has a factor of safety of 4 for flammable refrigerants. That is, when leaked refrigerant is fully mixed in a space, the maximum refrigerant concentration is 25% of the LFL and cannot ignite. Some basic requirements for refrigerant leak detectors have been added. However, research and development of refrigerant leak detectors is continuing, and additional requirements to specify robust and reliable refrigerant leak detection may be expected.

There was a considerable amount of research into the use of flammable refrigerants that occurred in 2016. The research is expected to continue into 2017 and beyond, and may include Class 2 and Class 3 refrigerants. Standard 15 must rely on published research at the time any addendum is published. It is premature to try to use any of the research results at this time.

And finally, Addendum d is relying on product standards for listed products that included the use Class 2L refrigerants. Product standards are under development and not yet published.

[Note to Reviewers: The draft of Addendum d that was used for the First Public Review is replaced in its entirety by this Second Public Review draft. This addendum also 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.

3. DEFINITIONS

occupational exposure limit (OEL): see definition in ANSI/ASHRAE Standard 34[1].

refrigerant designation: the unique identifying alphanumeric value or refrigerant number assigned to an individual refrigerant and published in ASHRAE Standard 34. [1]

7. RESTRICTIONS ON REFRIGERANT USE

7.5 Additional Restrictions

7.5.2 Applications for Human Comfort. Group A2, A3, B1, B2, B2L and B3 refrigerants shall not be used in high-probability systems for human comfort. Use of Group A2L refrigerants shall be in accordance with Section 7.6

Exceptions:

1. This restriction does not apply to sealed absorption and unit systems having refrigerant quantities less than or equal to those indicated in Table 7.4.

2. This restriction does not apply to industrial occupancies.

7.6 Group A2L Refrigerants for Human Comfort. High-probability systems using Group A2L refrigerants for human comfort applications shall comply with this section.

7.6.1 Refrigerant Concentration Limits. The requirements of Section 7.2 shall apply.

7.6.2 Listing and Installation Requirements. Refrigeration systems shall be *listed* and shall be installed in accordance with listing, the manufacturer's instructions, and any markings on the equipment restricting the installation.

7.6.2.1 For listings that require a *refrigerant detector*, the *refrigerant detector* shall comply with the requirements of Section 7.6.5

7.6.2.2 When the *refrigerant detector* senses a rise in refrigerant concentration above the value specified in Section 7.6.5 b), the following actions shall be taken.

a) Turn on the supply air fan. The supply air fan shall deliver the minimum air flow as defined by the following equation.

$Q_{min} = 1001.3 * M/LFL$ (I-P)

$Q_{min} = 60{,}000 * M/LFL$ (SI)

Where Q_{min} is the minimum airflow rate in cfm (m^3/hr)

M is the refrigerant charge in lbm (kg)

LFL is the lower flammability limit in lbm/Mcf (g/m^3)

b) Turn off the compressor and all other electrical devices, excluding the control power transformers, control systems, and the supply air fan. The supply air fan shall continue to operate for at least 30

minutes after the time that the refrigerant detector has sensed a drop in the refrigerant concentration below the value specified in Section 7.6.5 b)

c) Any device that controls air flow located within the product or in duct work that supplies air to the occupied space shall be fully open. Any device that controls air flow shall be listed.

7.6.3 Compressors and Pressure Vessel Located Indoors - Allowance to Exceed RCL. For refrigeration compressors and pressure vessels located in an indoor space that is accessible only during service and maintenance it shall be permissible to exceed the RCL if all of the following provisions are met.

a) The space where the refrigeration compressors and pressure vessels are located is less than the space volume given by the following equation.

$V = 200 * M$ (I-P)

$V = 12.5 * M$ (SI)

Where: V = space volume ft^3 (m^3)

M = the largest single circuit charge lb (kg)

b) The space where compressors and pressure vessels are located shall be mechanically ventilated in accordance with the following equation;

$Q_{min} = 1001.3 * M/LFL$ (I-P)

$Q_{min} = 60{,}000 * M/LFL$ (SI)

Where Q_{min} is the minimum airflow rate in cfm (m^3/hr)

M is the refrigerant charge in lbm (kg)

LFL is the lower flammability limit in lbm/Mcf (gm/m3)

c) The ventilation system shall be started when the refrigerant detector senses refrigerant in accordance with Section 7.6.5. The location of the refrigerant detector shall be in accordance with Section 7.6.5. The ventilation system shall continue to operate for at least 30 minutes after the refrigerant detector has sensed a drop in the refrigerant concentration below the value specified in Section 7.6.5 b)

d) The ventilation system air inlet shall be located where refrigerant from a leak is expected to accumulate. The inlet elevation shall be within 12 inches (30 cm) of the lowest elevation in the space where the compressor or pressure vessel is located.

e) Air that is exhausted from the ventilation system shall be either:

i. discharged outside of the building envelope, or

ii. discharged to an indoor space, provided that the refrigerant concentration will not exceed the limit specified in Section 7.6.1.

7.6.4 Enclosures Enclosures provided on self-contained equipment that is installed indoors shall either be:

a. constructed in such a manner that leaked refrigerant can enter the space where such equipment is installed that complies with Section 7.6.1, or

b. vented to the outdoors by natural or continuously operated mechanical means.

7.6.4.1 Where compressors and pressure vessels are enclosed in a manner that leaked refrigerant cannot enter the space where the equipment is installed, the enclosure shall be vented to the outdoors by natural or continuously operated mechanical means.

7.6.5 Refrigerant Detectors *Refrigerant detectors* required by Section 7.6.2 shall meet the following requirements:

a) Refrigerant detectors that are part of the listing shall be evaluated by the testing laboratory as part of the equipment listing.

b) The refrigerant detector set point to activate the functions required by Section 7.6.2.2 shall be at a value not exceeding the 25% of the *lower flammability limit (LFL).*

c) Refrigerant detectors shall be located such that refrigerant will be detected if the refrigerating system is operating, or not operating. Use of more than one refrigerant detector shall be permitted.

i) For refrigerating systems that are connected to the occupied space through ductwork, refrigerant detectors shall be located within the listed equipment.

ii) For refrigerating systems that are directly connected to the occupied space without ductwork, the refrigerant detector shall be located in the equipment, or shall be located in the occupied space at a height of not more than 12 inches (30 cm) above the floor and within a horizontal distance of not more 6.0 ft. (1.8 m) with a direct line of sight of the unit.

d) The refrigerant detector as installed, including any sampling tubes, shall cause the functions required by Section 7.6.2.2 within a time not to exceed 15 seconds, after exposure to a refrigerant concentration exceeding 25% of the LFL.

e). The refrigerant detector shall provide a means for automatic self-testing as provided in the product listing. If a failure is detected, a trouble alarm shall be activated and the supply air fan operated continuously. The refrigerant detector shall be tested during installation to the alarm set point and response time per 7.6.5 d). After installation, the refrigerant detector shall be tested annually or at an interval not exceeding the manufacturer's installation instructions, whichever is less.

Public Review Draft

Proposed Addendum aa to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

Third Public Review (March 2017)
(Draft Shows 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).

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Foreword

This ISC modifies proposed addendum AA to Standard 189.1 regarding the specifications for Renewable Energy Credits (RECs). The original proposed addendum and first ISC revised the definition of RECs and modified the charging language for the Standard Renewables Approach and the Alternate Standard Renewables Approach.

This ISC restores some language in the Definition that clarifies what attributes are included in the scope of a renewable energy credit. This ISC also clarifies in two places in the Addendum that it is the quantity of separately purchased RECs that must be equal to or greater than non-retained RECs which accrue to onsite renewable generation systems.

[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 aa to 189.1-2014

Revise Section 3.2 as follows:

renewable energy certificate (REC): A tradable instrument that represents the environmental attributes of one megawatt-hour of renewable electricity generation and is transacted separately from the electricity generated by the renewable energy source.

Revise Section 7.4.1.1.1 as follows:

7.4.1.1.1 Standard Renewables Approach: Baseline On-Site Renewable Energy Systems….. (*rest of the section is unchanged*)

… Documentation shall be provided to the AHJ that indicates that the *RECs* associated with the *on-site renewable energy system* will be retained and retired by the *owner*. Where the owner does not have ownership of the RECs associated with the *on-site renewable energy system*, the owner is permitted to obtain and retire ~~equivalent~~ an equal or greater quantity of RECs.

Revise Section 7.4.1.1.2 as follows:

7.4.1.1.2 Alternate Renewables Approach: Reduced On-Site Renewable Energy Systems and Higher-Efficiency Equipment…. (*rest of the section is unchanged*)

… Documentation shall be provided to the AHJ that indicates that the *RECs* associated with the *on-site renewable energy system* will be retained and retired by the *owner*. Where the owner does not have ownership of the RECs associated with the *on-site renewable energy system*, the owner is permitted to obtain and retire ~~equivalent~~ an equal or greater quantity of RECs.

Public Review Draft

Proposed Addendum ad to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

Second Public Review (March 2017)
(Draft Shows Independent Substantive Changes to Previous Public Review Draft)

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

Foreword

This ISC modifies proposed addendum AD to Standard 189.1 regarding the requirements for permanent projections (such as balconies, overhangs, or shading devices). The original proposed addendum removed the Chapter 7 prescriptive requirements for permanent projections in Climate Zones 4 and 5, retaining the requirements in Climate Zones 0 through 3. Following public comments, the committee considered additional analysis of energy savings in representative building types (PNNL medium office and high-rise apartment prototypes) in Climate Zones 3 through 5, including a preliminary assessment of the effect of potential thermal bridging through the building envelope insulation.

This ISC restores the requirement for permanent projections in Climate Zones 4B and 4C where the analysis showed similar positive energy savings as in Climate Zone 3. Projections are not required in Climate Zones 4A and 5 as the analysis showed the energy savings were more highly dependent on the level and magnitude of thermal bridging in these colder zones, with the potential for the thermal bridge to negate any savings from the projection. No other changes are made to the requirement or exceptions.

Note: This public review draft makes proposes 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) 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 ad to 189.1-2014

Revise Section 7.4.2.5 as follows:

7.4.2.5 Permanent Projections. For *Climate Zones* 0 through 3, <u>and *Climate Zones* 4B and 4C,</u> the *vertical fenestration* on the west, south, and east shall be shaded by permanent projections that have an area-weighted average *projection factor* (*PF*) of not less than 0.50 for the first story above grade and 0.25 for other above grade stories. The building is allowed to be rotated up to 45 degrees to the nearest cardinal orientation for purposes of calculations and showing compliance. Where different windows or glass doors have different projection factor values, each shall be evaluated separately, or an area-weighted projection factor value shall be calculated and used for all windows and glass doors. Horizontal projections shall extend over the full width of the glazing.

Exceptions: Permanent projections are not required for the following buildings and fenestrations:

1. Where *vertical fenestration* is located within 18 inches (500 mm) of the lot line.

2. Where equivalent shading of the *vertical fenestration* is provided by buildings, structures, geological formations, or permanent exterior projections that are not horizontal, as determined by sun angle studies at the peak solar altitude on the summer solstice, and three hours before and after the peak solar altitude on the summer solstice.

3. *Vertical fenestration* with automatically controlled shading devices capable of modulating in multiple steps the amount of solar gain and light transmitted into the *space* in response to daylight levels or solar intensity that comply with all of the following:
   a. Exterior shading devices shall be capable of providing at least 90% coverage of the *fenestration* in the closed position.
   b. Interior shading devices shall be capable of providing at least 90% coverage of the fenestration in the closed position and have a minimum solar reflectance of 0.50 for the surface facing the fenestration.
   c. A manual override located in the same enclosed space as the vertical fenestration shall override operation of automatic controls no longer than four hours.
   d. Acceptance testing and commissioning shall be conducted as required by Section 10 to verify that automatic controls for shading devices respond to changes in illumination or radiation intensity.

4. *Vertical fenestration* with automatically controlled *dynamic glazing* capable of modulating in multiple steps the amount of solar gain and light transmitted into the *space* in response to daylight levels or solar intensity that comply with all of the following:
   a. *Dynamic glazing* shall have a lower labeled *SHGC* equal to or less than 0.12, lowest labeled visible transmittance (VT) no greater than 0.05, and highest labeled VT no less than 0.40.
   b. A manual override located in the same *enclosed space* as the *vertical fenestration* shall override operation of *automatic* controls no longer than 4 hours.
   c. Acceptance testing and commissioning shall be conducted as required by Section 10 to verify that *automatic* controls for *dynamic glazing* respond to changes in illumination or radiation intensity.

5. Existing buildings undergoing alteration, repair, relocation, or a change of occupancy.

Public Review Draft

Proposed Addendum ag to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

Second Public Review (March 2017)
(Draft Shows Independent Substantive Changes to Previous Public Review Draft)

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FOREWORD

This addendum creates a new definition for plants that are suitable for inclusion in the requirements for site water user reduction. It is used instead of the term "adapted plants" to better describe the desired vegetation. This independent substantive review draft replaces the term in the first public review "ETc compatible plants" with a different term "rainfall-ETc compatible plants." reflecting comments received during the first public review. It also changes the exceptions to the landscape design requirements and adding a new exception to the irrigation requirements.

[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 ag to Standard 189.1-2014

Add new definition to Chapter 3 as follows:

Plants:

b. Rainfall-ETc compatible plants: plants with documented *ETc* rates, and having all of the following characteristics: (a) not native nor invasive to the local geographic area of the site; (b) after the *landscape establishment period* does not require supplemental annual irrigation based on the 10-year average annual rainfall of the local climate and based on 80% of the plant's *ETc*.

Revise Section 6 as follows:

6.3.1 Site Water Use Reduction

6.3.1.1 Landscape Design. A minimum of 60% of the area of the improved landscape shall be in biodiverse planting of native plants and <u>*Rainfall-*</u>*ETc compatible plants*.

Exceptions to 6.3.1.1:
1. The area of dedicated athletic fields, golf courses, ~~and~~ driving ranges, <u>and areas dedicated for production of food for human consumption</u> shall be excluded from the calculation of the *improved landscape* for schools, *residential* common areas, or public recreational facilities.
2. Landscape areas irrigated solely with alternate on-site sources of water <u>shall be exempt from these requirements.</u>
3. <u>Where average annual rainfall is less than twelve (12) inches (30 cm), plants other than turfgrass, with an annual *ETc* of fifteen (15) inches (38 cm) or less shall be deemed equivalent to *climate compatible plants*.</u>

6.3.1.3 Controls. Where any irrigation system for the project *site* uses an automatic controller, the system shall be controlled by a qualifying *smart controller* that uses *evapotranspiration (ET)* and weather data to adjust irrigation schedules and that complies with the minimum requirements or an on-site rain or moisture sensor that automatically shuts the system off after a predetermined amount of rainfall or sensed moisture in the soil.
Qualifying *smart controllers* shall meet the minimum requirements, as listed below, when tested in accordance with IA *SWAT* Climatological- Based Controllers 8th Draft Testing Protocol. *Smart controllers* that use *ET* shall use the following inputs for calculating appropriate irrigation amounts:

a. *Irrigation adequacy*—80% minimum *ETc*.
b. *Irrigation excess*—not to exceed 10%.

Exception to 6.3.1.3: A temporary irrigation system used exclusively for the establishment of new landscape shall be exempt from this requirement. Temporary irrigation systems shall be removed or permanently disabled at such time as the *landscape establishment period* has expired.

6.3.1.4 Irrigation of *Rainfall-ETc compatible plants*. The use of *potable water* or *reclaimed water* for irrigation for *adapted plants* are prohibited after the *landscape establishment period*. In-ground irrigation systems for *rainfall-ETc-compatible plants* using potable or off-site treated *reclaimed water* are prohibited. After the *landscape establishment period* of *adapted plants*, the irrigation system using *potable water* or *reclaimed water* shall be permanently disabled or removed from *site*.

Exception to 6.3.1.4 Plants deemed equivalent to *rainfall-ETc-compatible plants* by Exception 3 of 6.3.1.1 shall be exempt from the requirements of 6.3.1.4.

Public Review Draft

Proposed Addendum ak to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

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FOREWORD

This Independent Substantive Change to Addendum ak reflects comments submitted during the first public review and reduces the number of impact categories that must show improvement in the performance metric of Section 9.5.1.1. The addendum as a whole still constitutes a significant improvement over the existing requirement in Standard 189.1. Text was also added to Section 9.5.1.3 for consistency regarding verification.

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Addendum ak to 189.1-2014

Revise Section 9.5 as follows:

9.5.1.1 LCA Performance Metric.
The *LCA* shall demonstrate that the final building design achieves the following minimum improvement over the reference building design assessed in the *LCA*:
a. a 10% improvement in a minimum of each of two ~~three~~ impact categories, one of which must be global warming, or
b. a 5% improvement in a minimum of each of three ~~four~~ impact categories, one of which must be global warming.
…

9.5.1.3 Reporting. A report that includes a description of the building alternatives and their physical differences shall be prepared and shall comply with the reporting requirements stated in ASTM E2921. The name and address of the *design professional* or

other approved source verifying structural system material quantities shall be included. A critical review shall be performed by an external expert independent of those performing the LCA.

…

Public Review Draft

Proposed Addendum al to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

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FOREWORD

This addendum modifies the provisions for electric vehicle charging infrastructure to include an additional option to provide electric conduit from electric service panels to parking lot spaces during new building construction. This will support the future installation of electric vehicle charging infrastructure in the most cost effective manner possible. This language does not include the installation of circuit breakers or electric vehicle charging infrastructure, but it provides for the installation of the conduit and the proper sizing of the service panel.

This is a revision to the version that was posted for public review in autumn 2016. The public review of that addendum revealed ambiguities in the implementation of the provisions of section 5.3.7.3. This revision is intended to clarify the requirements.

Note to reviewers: This public review draft makes proposes 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) 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 al to 189.1-2014

Revise Section 5.3.7.3 as follows:

5.3.7.3 *Site* Vehicle Provisions. Where on-site vehicle parking is provided for a building that has a building *occupant load* greater than 100, at least one of the following shall be provided:

a. **Provisions for preferred parking *spaces*.** ~~At least~~ <u>Not less than</u> five percent of the parking *spaces* provided shall be designated as preferred parking for vehicles that meet both the minimum greenhouse gas and air pollution scores as required for USEPA SmartWay designation. <u>Where calculation of the parking spaces yields a fraction, such fractions shall be rounded up to the next whole number.</u> Preferred parking *spaces* shall be located on the shortest route of travel from the parking facility to a *building entrance* but shall not take precedence over parking *spaces* that are required to be accessible for individuals with disabilities. Where buildings have multiple entrances with adjacent parking, parking *spaces* shall be dispersed and located near the entrances. Such parking *spaces* shall be provided with signage approved by the *AHJ* that specifies the permitted usage.

b. **Provisions for electric vehicle charging infrastructure**. The *building project* shall comply with one of the following:

1. Two or more electric vehicle charging stations shall be available to the building occupants and shall be located not more than 1/4 mile (400 m) from the *building project*.

2. Electrical raceways shall be installed and extend from one or more of the building's electrical power distribution panels to not less than the number of parking spaces specified in Table 5.3.7.3, to facilitate the future installation of vehicle charging stations. Electrical power distribution panels serving such raceways shall be sized to supply the future charging stations based on a design load of ~~no~~ not less than 40 amperes per required parking space at a supply voltage of ~~no~~ not less than 208/240 VAC.

Table 5.3.7.3

Total number of ~~actual~~ parking spaces provided	**Number of ~~required~~ spaces required to have raceways**
~~0 9~~	~~0~~
~~10 25~~ 1-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	5% of total

Public Review Draft

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FOREWORD

This addendum updates the acoustical requirements of 189.1. Its development included comparison with the International Green Construction Code, Acoustical Society of America, Facilities Guideline Institute, LEED, and benefitted from the participation of ASHRAE Technical Committee TC 2.6 Sound and Vibration Control.

The most significant changes include:

- *requires that room background noise levels be controlled by calculation instead of by prescribing many interrelated features,*
- *recognition of Acoustical Society of America standards for schools,*
- *recognition of Facility Guidelines Institute's guidelines for healthcare facilities,*
- *allows either a prescriptive or Tested Performance approach for building envelope and interior assemblies,*
- *~~i~~introduces requirements for mechanical equipment and noise to adjacent properties by equipment, and*
- *addition of new section on acoustical testing in Chapter 10*
- *added normative standards to Chapter 11*

This ISC public review reflects input from comments received during the first 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 as to 189.1-2014

(Delete abbreviations and acronyms for Chapter 3 as shown below)

Chapter 3

Section 3.3 – Abbreviations and Acronyms

~~AIIC – Apparent Impact Insulation Class~~

~~ASTC – Apparent Sound Transmission Class~~

(Revise Section 8.3.3 as follows)

8.3.3 Acoustical Control. The provisions of this section shall govern acoustical control for the building envelope, the interior spaces within the building or structure, and the design of the related mechanical equipment and systems. School spaces identified in ANSI/ASA S12.60 shall comply with ANSI/ASA S12.60. Healthcare spaces, as defined in the FGI Guidelines, shall comply with the FGI Guidelines. All other spaces shall be designed in accordance with Sections 8.3.3.1 through 8.3.3.5.

Table 8.3.3.2. Maximum Interior Background Sound Pressure Levels from Building Systems and Exterior Sound Sources[b]

	Hourly Average Sound Pressure Level (L_{EQ})		Maximum Sound Pressure Level ($L_{MAX\ -\ slow\ time\ weighting}$)	
Room Type	**dBA**	**dBC**	**dBA**	**dBC**
Residential Sleeping Areas (Nighttime[a])	35	60	45	70
Residential Living & Sleeping areas (Daytime)	40	60	50	70
Hotel and Motel guest rooms or suites, and dormitories	40	60	50	70
Meeting and banquet rooms	35	60	45	70
Corridors and lobbies	45	65	60	75
Service and support areas	45	65	60	75
Enclosed offices	35	60	45	70
Conference rooms	35	60	45	70
Teleconference rooms	30	55	40	65
Open-plan offices	45	65	55	75
Courtrooms - Unamplified speech	35	60	45	70
Courtrooms - Amplified speech	40	60	50	70
Laboratories - Minimal speech communication	55	75	65	85
Laboratories - Extensive phone use and speech communication	50	70	60	80
Laboratories - Group teaching	40	60	50	70
Religious - General assembly with music program	30	55	40	65
Library study and reading areas	35	60	45	70
Gymnasiums and natatoriums without speech amplification	50	70	60	80
Gymnasiums and natatoriums with speech amplification	55	75	65	85

a. Nighttime is defined as the time between 10 PM and 7 AM.
b. For high noise exterior events refer to section 8.3.3.2.1.

…

8.3.3.2.3.1 Building Envelope. The composite Sound Transmission Class (~~c STC~~cSTC) for the building envelope shall be calculated and used in determining the maximum interior background sound pressure levels for room types listed in Table 8.3.3.2.

8.3.3.2.3.2 Interior Systems. ~~All i~~Interior noise from HVAC systems shall be calculated for room types listed in Table 8.3.3.2 shall be calculated and used in determining the maximum interior background sound pressure levels for the room types listed in Table 8.3.3.2. ~~including HVAC, plumbing, lighting and elevators shall be specified and designed in accordance with guidelines for acoustic performance acceptable to the *AHJ*.~~

8.3.3.2.3.3 Penetrations and Fenestrations. All penetrations through, and fenestrations within, sound rated assemblies shall be sealed in accordance to ASTM C919 and installed per the manufacturer's recommendations.

8.3.3.2.3.4 Inspection. ~~Acoustical c~~Construction of acoustical ~~exterior wall and roof assemblies, including installation and detailing of fenestrations and penetrations in the building envelope as well as all mechanical systems~~ items required in 8.3.3.2.3 through 8.3.3.2.3.3 shall be visually inspected by an approved ~~professional~~ agency ~~or the *AHJ*~~.

…

8.3.3.3 Interior Sound Transmission. Interior wall and floor-ceiling assemblies separating adjacent interior *spaces* shall be designed and constructed to provide airborne sound isolation that complies with the minimum cSTC values specified in Table 8.3.3.3. For wall and floor-ceiling assemblies separating different room types, the greater of the two cSTC values shall apply. Floor-ceiling assemblies separating adjacent interior *spaces* shall be designed and constructed to provide impact sound isolation that comply with the minimum IIC values specified in Table 8.3.3.3. For floor-ceiling assemblies separating different room types, the IIC value associated with the room on the story below shall apply.

Table 8.3.3.3 Minimum Sound & Impact Sound Ratings

Room Type	**cSTC[c,d]**	**IIC**
Dwelling Unit (Apartment, Condominium, Duplex, Hotel Guest Room, etc.)	55	55
Retail or Restaurant	50	45
Exercise, Gym or Pool[b]	55	50[a]
Mechanical, Electrical, and Elevator Machinery Rooms[b]	60	n/a[e]
Conference and Teleconference Rooms	50	50
Enclosed Offices	45	45
Open Offices	n/a[e]	45

a. The IIC value listed addresses footfall noise but not exercise related vibration-borne sound. Exercise related vibration-borne sound shall comply with the requirements of Section 8.3.3.2.

b. Minimum cSTC and IIC values are not required between ~~similar room types~~ adjacent rooms of the same room type.

c. For operable partitions and walls containing doors, windows, or both, the minimum cSTC ratings shall be 5 less than the values listed in Table 8.3.3.3.

d. The minimum ~~composite~~ cSTC values shall be 5 less than the cSTC values in Table 8.3.3.3~~2~~ for walls between spaces and corridors and between spaces and open offices. The minimum ~~composite~~ cSTC values shall be 15 less than the cSTC values specified in Table 8.3.3.3 for walls having doors that open to corridors or open offices.
e. Not applicable

…

8.3.3.3.2 Interior Sound Transmission – Design. Wall and floor-ceiling assemblies shall comply with the following:

a. Assemblies shall be required to provide sound isolation in accordance with this section and shall adjoin other intersecting sound isolating assemblies along all perimeter edges so as to provide continuity of sound isolation.
b. All partitions between spaces with different uses shall be full height partitions or shall extend to a ceiling system with a CAC rating equal to or greater than the wall cSTC rating and all floor-ceiling assemblies shall be full span assemblies connected to the walls/partitions.
c. Assemblies shall be sealed at all potential flanking paths and around all penetrations according to ASTM C919 and installed in accordance with the sealant manufacturer's recommendations to achieve the assembly's required performance rating.

8.3.3.3.2.1 Inspection. ~~Acoustical c~~Construction of acoustical items required in 8.3.3.3.2 shall be visually inspected by an approved agency. ~~Construction of walls, wall assemblies, and floors or floor/ceiling assemblies shall be visually inspected by a party acceptable to the *AHJ* and the plan for inspection necessary to comply with this section shall be included in the Construction Documents.~~

(Revise Section 10.3.1.1.5.1.2 as follows)

10.3.1.1.5.1.2 Interior Sound Transmission. The testing of interior sound transmission shall be in accordance with ASTM E336, Noise Isolation Class (NIC), and ASTM E 1007, Impact Sound Rating (ISR). Tested NIC values shall not be more than 5 less than the cSTC values and the ISR values shall not be less than the IIC values in Table 8.3.3.3. Testing shall be performed on not less than 10% of the partitions between rooms of each type in Table 8.3.3.3 that has a prescribed cSTC or ~~NIC or~~ IIC of 50 or higher.

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FOREWORD

This proposal simplifies the application of lighting power allowances in ASHRAE 189.1and increases their stringency, while maintaining the same provisions for illuminance. The changes below are fixes to typos and alignment with ASHRAE 90.1 naming conventions. In the published version of ASHRAE 90.1-2016, the building type description "Religious building" was changed to "Religious facility" in this ISC, the same change is made for purposes of alignment with ASHRAE 90.1. Two typos were also fixed in Table 7.4.6.1B as described below. In fixing the typo related to storage room areas, this matches the storage room area sizes in ASHRAE 90.1-2016.

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Second ISC for Addendum av to 189.1-2014

Modify Table 7.4.6.1.A, changing "Religious building" to "Religious facility" (remainder of table does not change):

TABLE 7.4.6.1A Lighting Power Densities Using the Building Area Method

Building Area Type[a]	LPD, W/ft^2	LPD, W/m^2
…		
Religious ~~building~~ facility	0.70	7.5
…		

Modify Table 7.4.6.1 B, changing from "≥ 40 feet" to "≤40 feet" on atria height description on second row of atrium LPDs
Modify Table 7.4.6.1 B and changing from "100ft^2" to "1000 ft^2" on second row of storage area LPDs (remainder of table does not change)

TABLE 7.4.6.1B Lighting Power Density Allowances and RCR Thresholds Using the Space-by-Space Method

Informative Note: **This table is divided into two sections; this first section covers space types that can be commonly found in multiple building types. The second part of this table covers space types that are typically found in a single building type.**

Common Space Types[1]	LPD, W/ft^2	LPD, W/m^2	RCR Threshold
Atrium			
<20 ft (6.1 m) in height	0.023/ft total height	0.81/m total height	NA
~~≥20 ft (6.1m) and ≥ 40 ft (12.2 m) in height~~ ≥20 ft (6.1m) and ≤ 40 ft (12.2 m) in height	0.023/ft total height	0.81/m total height	NA
>40 ft (12,2 m) in height	0.30 + 0.015/ft total height	3.2 + 0.53/m total height	NA
…			
Storage Room			
<50 ft^2 (4.6m^2)	0.86	9.3	6
≥50 ft^2 (4.6m^2) and ≤ 1,000 ft^2 (93 m^2) ~~100 ft^2 (9.3 m^2)~~	0.43	4.6	6
All other storage rooms	0.43	4.6	6
…			

Public Review Draft

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Foreword

Standard 189.1 has criteria for carbon dioxide equivalent (CO_2e) emissions. Table 7.5.2B of the standard contains CO_2e emission rates for various energy sources including electricity and natural gas, the two energy sources predominantly used in buildings. This addendum updates the values in this table.

The emissions associated with the burning of each fuel include not only carbon dioxide (CO_2) but also methane (CH_4) and nitrous oxide (N_2O). The CH_4 and N_2O emissions are smaller, but more potent for a given unit of emissions. The CO_2e values published in this addendum include all three direct emissions. The rate of emissions for each fuel is taken from NREL/TP-550-38617, June 2007. Emissions of CH_4 and N_2O are then weighted by the 100-year cumulative forcing published in IPCC AR5.

In addition to direct emissions related to combustion, greenhouse gas emissions also result from the extraction of fossil fuels from the earth, their refinement, and their transportation to the point of combustion. The values in the table include these upstream emissions based on NREL/TP-550-38617, June 2007.

The mix of fuels used to generate electricity is changing each year as more wind and solar are added to the electric grid and as coal plants are retired and replaced by cleaner burning gas generators. The recommended CO_2e values for electricity are based on the mix of fuels used to generate electricity in 2015, the last year of complete data at the time of the analysis. The fossil fuels used to generate electricity included coal, natural gas, and petroleum. A small amount of greenhouse gases are also emitted related to the flashing of steam at geothermal power plants. The direct and upstream emissions related to these fuels are normalized by the amount of electricity produced and delivered to building sites. The rate of direct and upstream emissions related to combustion at the power plant is assumed to be the same as combustion at the building site.

The committee intends to update the CO_2e emissions with each publication of the standard using the procedures developed for this addendum.

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Addendum bd to 189.1-2014

Modify Table 7.5.2B as follows:

TABLE 7.5.2B CO_2e Emission Factors

Building Project Energy Source	CO_2e, lb/~~k~~MWh	CO_2e, (kg/~~k~~MWh)
Grid delivered electricity and other fuels not specified in this table	~~1.387~~ 1,348	~~(0.630)~~ 612
LPG or propane	~~0.600~~ 601	~~(0.272)~~ 273
Fuel Oil (residual)	~~0.751~~ 685	~~(0.341)~~ 311
Fuel Oil (distillate)	~~0.706~~ 663	~~(0.320)~~ 301
Coal	~~0.836~~ 820	~~(0.379)~~ 372
Gasoline	~~0.689~~ 681	~~(0.313)~~ 309
Natural Gas	~~0.483~~ 509	~~(0.219)~~ 231
District Chilled Water	~~0.332~~ 323	~~(0.151)~~ 146
District Steam	~~0.812~~ 855	~~(0.368)~~ 388
District Hot Water	~~0.767~~ 807	~~(0.348)~~ 366
Note: The values in this table represent national averages for the United States and include both direct and indirect emissions.		

Public Review Draft

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FOREWORD

This addendum proposes to update the cooling tower requirements by specifying different maximum concentrations of contaminants for different cooling tower materials and simplifying the calculations for meeting the requirements.

This addendum also proposes to move the prescriptive cooling tower requirements in 6.4.2.1 with a set of revised mandatory requirements in section 6.3. A previous addendum (designated as s), which previously went out for public review, proposed to move these requirements from section 6.4 to section 6.3 but did not revise them. If the addendum below is approved, along with addendum, s, the intent is to replace the current cooling tower requirements with those shown below in 6.3.2.3.

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Addendum bf to 189.1-2014

Modify section 3 as follows:

Water Treatment Professional: any person, either employed by the owner or an outside firm contracted to provide water treatment services for the owner, knowledgeable on the requirements for implementing a water management program for the applicable water system(s) including, but not limited to the control of scale, corrosion, fouling, and biological growth while minimizing the use of water.

Langelier Saturation Index (LSI): a measure of a solution's ability to dissolve or deposit calcium carbonate that is often used as an indicator of the corrosivity of water, calculated using the following formula:

$$LSI = pH - pH_s$$

where

pH is the measured water pH
pH_s is the pH at saturation in calcium carbonate

Modify Section 6.3.2.3 as follows:

6.3.2.3 HVAC Systems and Equipment

a. *Once-through cooling* with *potable water* is prohibited.

b. The water treatment program for systems containing open circuit cooling towers for air conditioning systems shall be designed by a *water treatment professional* to maintain maximum water conservation while not allowing the water properties to exceed the limiting parameter for the material of construction of the open circuit cooling tower listed in Table 6.3.2.3. For open circuit cooling tower materials of construction not listed in Table 6.3.2.3, the water treatment professional shall choose the values from the table that are compatible with the specific materials of construction used.

Table 6.3.2.3 Recirculating Water Properties for Open Circuit Cooling Tower Materials of Construction

Maximum Value for the Property of Recirculating Water*	Open Circuit Cooling Tower Materials of Construction			
	Galvanized Steel (Passivated)	Type 301 Stainless Steel	Type 304 Stainless Steel	Type 316 Stainless Steel
Conductivity (micro-ohms)	2,400	3,300	3,300	4,000
Total Dissolved Solids (ppm)	1,500	2,050	2,050	2,500
pH	6.5 to 9.0	6.0 to 9.2	6.0 to 9.2	6.0 to 9.5
Total Alkalinity as CaCO3 (ppm)	500	600	600	600
Calcium Hardness as CaCO3 (ppm)	600	600	600	600
Chlorides as Cl (ppm)	300	300	300	750
Sulfates (ppm)	250	250	350	750
Silica (ppm)	150	150	150	150
LSI (Langelier Saturation Index)	+2.8	+2.8	+2.8	+2.8

* Based on a maximum recirculating water temperature of 120°F (49°C).

c. The materials of construction for the water system, including heat exchangers, piping, and valves, shall be evaluated and the recirculating water properties shall be maintained within the range recommended by manufacturer.

~~b~~. d. Open circuit ~~C~~cooling towers, closed circuit cooling towers, and evaporative condensers ~~coolers~~ shall be equipped with makeup ~~and blowdown~~ meters, conductivity controllers, and overflow alarms in accordance with the thresholds listed in Table 6.3.3A~~. Cooling towers~~ and shall also be equipped with ~~efficient~~ drift eliminators that achieve drift reduction ~~to a maximum~~ of 0.002% or less of the recirculated water volume for counterflow towers and 0.005% or less of the recirculated water flow for cross-flow towers.

~~c~~. e. *Building projects* located in regions where the ambient mean coincident wet-bulb temperature at 1% design cooling conditions is greater than or equal to 72°F (22°C) shall have a system for collecting condensate from air-conditioning units with a capacity greater than 65,000 Btu/h (19 kW), and the condensate shall be recovered for re-use.

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FOREWORD

This addendum changes table B-5, which defines the requirements for Single Packaged Vertical Air Conditioners, Single Packaged Vertical Heat Pumps, Room Air Conditioners, and Room Air Conditioner Heat Pumps.

The efficiencies are revised as follows;

- SVAC efficiencies are revised to match the efficiency levels for Unitary Products as defined in table 6.8.1-1 and 6.8.1-2 of ASHRAE 90.1-2016 which are greater than the efficiencies for SPVAC products as listed in ASHRAE 90.1-2016 table 6.8.1-4.
- The room air conditioner requirements are modified to match 10/26/2015 Energy Star requirements. This includes the use of the new CEER metric as defined in AHAM RAC-1-2015 Specification As part of the EnergyStar requirements they also have defined a required for connected equipment “Smart” room air conditioners” that are connected to utility programs are allowed a different CEER value (5% lower, since they may use a tiny bit more in the “standby” mode). This option will require compliance with the requirements in the EnergyStar document 4.0

References are also impacted by this changed, but will be updated as part of another addendum on references.

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Addendum bi to 189.1-2014

Add a new definition to section 3 as shown below;

Combined Energy Efficiency Ratio (CEER* IP*) (CCOP$_C$* SI*): The Combined Energy Efficiency is a ratio of the total cooling in one year divided by the total energy from active, standby, and off modes as defined in the AHAM Standard RAC-1. Units of Btu/W for IP and W/W for SI.

Delete the current IP table B-5 and replace with the new table B-5;

~~TABLE B-5 (Supersedes Table 6.8.1-4 in ANSI/ASHRAE/IES Standard 90.1)~~
~~Single Packaged Vertical Air Conditioners, Single Packaged Vertical Heat Pumps, Room Air Conditioners, and Room Air Conditioner Heat Pumps—Minimum Efficiency Requirements (I-P)~~

~~Equipment Type~~	~~Size Category (Input)~~	~~Subcategory or Rating Condition~~	~~Minimum Efficiency~~	~~Test Procedure[a]~~
~~SPVAC (cooling mode)~~	~~<65,000 Btu/h~~	~~95°F DB/75°F WB *Outdoor air*~~	~~14.0 SEER~~	~~AHRI 210/240~~
	~~≥65,000 Btu/h and <135,000 Btu/h~~	~~95°F DB/75°F WB *Outdoor air*~~	~~11.2 EER 12.9 IEER~~	~~AHRI 340/360~~
	~~≥135,000 Btu/h and <240,000 Btu/h~~	~~95°F DB/75°F WB *Outdoor air*~~	~~11.0 EER 12.4 IEER~~	
~~SPVHP (cooling mode)~~	~~<65,000 Btu/h~~	~~95°F DB/75°F WB *Outdoor air*~~	~~14.0 SEER~~	~~AHRI 210/240~~
	~~≥65,000 Btu/h and <135,000 Btu/h~~	~~95°F DB/75°F WB *Outdoor air*~~	~~11.0 EER 12.2 IEER~~	~~AHRI 340/360~~
	~~≥135,000 Btu/h and <240,000 Btu/h~~	~~95°F DB/75°F WB *Outdoor air*~~	~~10.6 EER 11.6 IEER~~	
~~SPVHP (heating mode)~~	~~<65,000 Btu/h~~	~~47°F DB/43°F WB *Outdoor air*~~	~~8.0 HSPF~~	~~AHRI 210/240~~
	~~≥65,000 Btu/h and <135,000 Btu/h~~	~~47°F DB/43°F WB *Outdoor air*~~	~~3.3 COP$_H$~~	~~AHRI 340/360~~
	~~≥135,000 Btu/h and <240,000 Btu/h~~	~~47°F DB/43°F WB *Outdoor air*~~	~~3.2 COP$_H$~~	
~~Room air conditioners, with louvered sides~~	~~<6000 Btu/h~~		~~10.7 SEER~~	~~ANSI/AHAM RAC-1~~
	~~≥6000 Btu/h and <8000 Btu/h~~		~~10.7 EER~~	
	~~≥8000 Btu/h and <14,000 Btu/h~~		~~10.8 EER~~	
	~~≥14000 Btu/h and <20,000 Btu/h~~		~~10.7 EER~~	
	~~≥20,000 Btu/h~~		~~9.4 EER~~	
~~Room air conditioners, without louvered sides~~	~~<8000 Btu/h~~		~~9.9 EER~~	
	~~≥8000 Btu/h and <20,000 Btu/h~~		~~9.4 EER~~	
	~~≥20,000 Btu/h~~		~~9.3 EER~~	
~~Room air conditioner heat pump with louvered sides~~	~~<20,000 Btu/h~~		~~9.9 EER~~	
	~~≥20,000 Btu/h~~		~~9.3 EER~~	
~~Room air conditioner heat pump without louvered sides~~	~~<14,000 Btu/h~~		~~9.4 EER~~	
	~~≥14,000 Btu/h~~		~~8.8 EER~~	
~~Room air conditioner, casement only~~	~~All capacities~~		~~9.6 EER~~	
~~Room air conditioner, casement slider~~	~~All capacities~~		~~10.5 EER~~	

~~a. Section 11 contains details for the referenced test procedure, including the referenced year version of the test procedure.~~

Insert the new IP B-5 table

TABLE B-5 (Supersedes Table 6.8.1-4 in ANSI/ASHRAE/IES Standard 90.1)
Single Packaged Vertical Air Conditioners, Single Packaged Vertical Heat Pumps, Room Air Conditioners, and Room Air Conditioner Heat Pumps—Minimum Efficiency Requirements (I-P)

Equipment Type	Size Category (Input)	Subcategory or Rating Condition	Minimum Efficiency Base	Minimum Efficiency Connected[b]	Test Procedure[a]
SPVAC (cooling mode)	<65,000 Btu/h	95°F DB/75°F WB *Outdoor air*	14.0 SEER		AHRI 210/240
	≥65,000 Btu/h and <135,000 Btu/h	95°F DB/75°F WB *Outdoor air*	11.2 EER 12.9 IEER		AHRI 340/360
	≥135,000 Btu/h and <240,000 Btu/h	95°F DB/75°F WB *Outdoor air*	11.0 EER 12.4 IEER		
SPVHP (cooling mode)	<65,000 Btu/h	95°F DB/75°F WB *Outdoor air*	14.0 SEER		AHRI 210/240
	≥65,000 Btu/h and <135,000 Btu/h	95°F DB/75°F WB *Outdoor air*	11.0 EER 12.2 IEER		AHRI 340/360
	≥135,000 Btu/h and <240,000 Btu/h	95°F DB/75°F WB *Outdoor air*	10.6 EER 11.6 IEER		
SPVHP (heating mode)	<65,000 Btu/h	47°F DB/43°F WB *Outdoor air*	8.0 HSPF		AHRI 210/240
	≥65,000 Btu/h and <135,000 Btu/h	47°F DB/43°F WB *Outdoor air*	3.3 COP_H		AHRI 340/360
	≥135,000 Btu/h and <240,000 Btu/h	47°F DB/43°F WB *Outdoor air*	3.2 COP_H		
Room air conditioners, with louvered sides	<6000 Btu/h		12.1 CEER	11.5 CEER	ANSI/AHAM RAC-1
	≥6000 Btu/h and <8000 Btu/h		12.1 CEER	11.5 CEER	
	≥8000 Btu/h and <14,000 Btu/h		12.0 CEER	11.5 CEER	
	≥14000 Btu/h and <20,000 Btu/h		11.8 CEER	11.2 CEER	
	≥20000 Btu/h and <28,000 Btu/h		10.3 CEER	9.8 CEER	
	≥28,000 Btu/h		9.9 CEER	9.4 CEER	
Room air conditioners, without louvered sides	<6000 Btu/h		11.0 CEER	10.5 CEER	
	≥6000 Btu/h and <8,000 Btu/h		11.0 CEER	10.5 CEER	
	≥8000 Btu/h and <11,000 Btu/h		10.6 CEER	10.1 CEER	
	≥11,000 Btu/h and <14,000 Btu/h		10.5 CEER	10.0 CEER	
	≥14,000 Btu/h and <20,000 Btu/h		10.2 CEER	9.7 CEER	
	≥20,000 Btu/h		10.3 CEER	9.8 CEER	
Room air conditioner heat pump with louvered sides	<20,000 Btu/h		10.8 CEER	10.3 CEER	
	≥20,000 Btu/h		10.2 CEER	9.7 CEER	
Room air conditioner heat pump without louvered sides	<14,000 Btu/h		10.2 CEER	9.7 CEER	
	≥14,000 Btu/h		9.6 CEER	9.1 CEER	
Room air conditioner, casement only	All capacities		10.5 CEER	10.0 CEER	
Room air conditioner, casement-slider	All capacities		11.4 CEER	10.8 CEER	

a. Section 11 contains details for the referenced test procedure, including the referenced year version of the test procedure.

b. Connected room air conditioners that are connected to utility programs are allowed a lower CEER value, but must be in compliance and certified per EnergyStar version 4.0 requirements for connected equipment.

Delete the SI table B5 and replace with the new table.

~~TABLE B-5 (Supersedes Table 6.8.1-4 in ANSI/ASHRAE/IES Standard 90.1)~~
~~Single Packaged Vertical Air Conditioners, Single Packaged Vertical Heat Pumps, Room Air Conditioners, and Room Air Conditioner Heat Pumps—Minimum Efficiency Requirements (SI)~~

~~Equipment Type~~	~~Size Category (Input)~~	~~Subcategory or Rating Condition~~	~~Minimum Efficiency~~	~~Test Procedure[a]~~
~~SPVAC (cooling mode)~~	~~<19 kW~~	~~35°C DB/23.9°C WB Outdoor air~~	~~4.10 $SCOP_C$~~	~~AHRI 390~~
	~~≥19 kW and <40 kW~~	~~35°C DB/23.9°C WB Outdoor air~~	~~3.28 COP_C 3.78 $ICOP_C$~~	
	~~≥40 kW and <70 kW~~	~~35°C DB/23.9°C WB Outdoor air~~	~~3.22 COP_C 3.63 $ICOP_C$~~	
~~SPVHP (cooling mode)~~	~~<19 kW~~	~~35°C DB/23.9°C WB Outdoor air~~	~~4.10 $SCOP_C$~~	
	~~≥19 kW and <40 kW~~	~~35°C DB/23.9°C WB Outdoor air~~	~~3.22 COP_C 3.58 $ICOP_C$~~	
	~~≥40 kW and <70 kW~~	~~35°C DB/23.9°C WB Outdoor air~~	~~3.11 COP_C 3.40 $ICOP_C$~~	
~~SPVHP (heating mode)~~	~~<19 kW~~	~~8.3°C DB/6.1°C WB Outdoor air~~	~~2.34 $SCOP_H$~~	
	~~≥19 kW and <40 kW~~	~~8.3°C DB/6.1°C WB Outdoor air~~	~~3.30 COP_H~~	
	~~≥40 kW and <70 kW~~	~~8.3°C DB/6.1°C WB Outdoor air~~	~~2.9 COP_H~~	
~~Room air conditioners, with louvered sides~~	~~<1.8 kW~~		~~3.14 COP_C~~	~~ANSI/AHAM RAC-1~~
	~~≥1.8 kW and <2.3 kW~~		~~3.14 COP_C~~	
	~~≥2.3 kW and <4.1 kW~~		~~3.17 COP_C~~	
	~~≥4.1 kW and <5.9 kW~~		~~3.14 COP_C~~	
	~~≥5.9 kW~~		~~2.75 COP_C~~	
~~Room air conditioners, without louvered sides~~	~~<2.3 kW~~		~~2.90 COP_C~~	
	~~≥2.3 kW and <5.9 kW~~		~~2.75 COP_C~~	
	~~≥5.9 kW~~		~~2.73 COP_C~~	
~~Room air conditioner heat pump with louvered sides~~	~~<5.9 kW~~		~~2.90 COP_C~~	
	~~≥5.9 kW~~		~~2.73 COP_C~~	
~~Room air conditioner heat pump without louvered sides~~	~~<4.1 kW~~		~~2.75 COP_C~~	
	~~≥4.1 kW~~		~~2.58 COP_C~~	
~~Room air conditioner, casement only~~	~~All capacities~~		~~2.81 COP_C~~	
~~Room air conditioner, casement-slider~~	~~All capacities~~		~~3.08 COP_C~~	

~~a. Section 11details for the referenced test procedure, including the referenced year version of the test procedure~~

Insert SI table B-5

TABLE B-5 (Supersedes Table 6.8.1-4 in ANSI/ASHRAE/IES Standard 90.1)
Single Packaged Vertical Air Conditioners, Single Packaged Vertical Heat Pumps, Room Air Conditioners, and Room Air Conditioner Heat Pumps—Minimum Efficiency Requirements (SI)

Equipment Type	Size Category (Input)	Subcategory or Rating Condition	Minimum Efficiency Base	Minimum Efficiency Connected[b]	Test Procedure[a]
SPVAC (cooling mode)	<19 kW	35°C DB/23.9°C WB *Outdoor air*	4.10 $SCOP_C$		AHRI 210/240
	≥19 kW and <40 kW	35°C DB/23.9°C WB *Outdoor air*	3.28 COP_C 3.78 $ICOP_C$		AHRI 340/360
	≥40 kW and <70 kW	35°C DB/23.9°C WB *Outdoor air*	3.22 COP_C 3.63 $ICOP_C$		
SPVHP (cooling mode)	<19 kW	35°C DB/23.9°C WB *Outdoor air*	4.10 $SCOP_C$		AHRI 210/240
	≥19 kW and <40 kW	35°C DB/23.9°C WB *Outdoor air*	3.22 COP_C 3.58 $ICOP_C$		AHRI 340/360
	≥40 kW and <70 kW	35°C DB/23.9°C WB *Outdoor air*	3.11 COP_C 3.40 $ICOP_C$		
SPVHP (heating mode)	<19 kW	8.3°C DB/6.1°C WB *Outdoor air*	2.34 $SCOP_H$		AHRI 210/240
	≥19 kW and <40 kW	8.3°C DB/6.1°C WB *Outdoor air*	3.30 COP_H		AHRI 340/360
	≥40 kW and <70 kW	8.3°C DB/6.1°C WB *Outdoor air*	3.2 COP_H		
Room air conditioners, with louvered sides	<1.8 kW		3.55 $CCOP_C$	3.37 $CCOP_C$	ANSI/AHAM RAC-1
	≥1.8 kW and <2.3 kW		3.55 CCOP	3.37 $CCOP_C$	
	≥2.3 kW and <4.1 kW		3.52 $CCOP_C$	3.37 $CCOP_C$	
	≥4.1 kW and <5.9 kW		3.46 $CCOP_C$	3.28 $CCOP_C$	
	≥5.9 kW and <8.2 kW		3.02 $CCOP_C$	2.87 $CCOP_C$	
	≥8.2 kW		2.90 $CCOP_C$	2.75 $CCOP_C$	
Room air conditioners, without louvered sides	<1.8 kW		3.22 CCOP	3.08 CCOP	
	≥1.8 kW and <2.3 kW		3.22 $CCOP_C$	3.08 $CCOP_C$	
	≥2.3 kW and <4.1 kW		3.11 CCOP	2.96 CCOP	
	≥4.1 kW and <5.9 kW		3.08 $CCOP_C$	2.93 $CCOP_C$	
	≥5.9 kW and <8.2 kW		2.99 $CCOP_C$	2.84 $CCOP_C$	
	≥8.2 kW		3.02 $CCOP_C$	2.87 $CCOP_C$	
Room air conditioner heat pump with louvered sides	<5.9 kW		3.17 $CCOP_C$	3.02 $CCOP_C$	
	≥5.9 kW		2.99 $CCOP_C$	2.84 $CCOP_C$	
Room air conditioner heat pump without louvered sides	<4.1 kW		2.99 $CCOP_C$	2.84 $CCOP_C$	
	≥4.1 kW		2.81 $CCOP_C$	2.67 $CCOP_C$	
Room air conditioner, casement only	All capacities		3.08 $CCOP_C$	2.93 $CCOP_C$	
Room air conditioner, casement-slider	All capacities		3.34 $CCOP_C$	3.17 $CCOP_C$	

a. Section 11details for the referenced test procedure, including the referenced year version of the test procedure

b. Connected room air conditioners that are connected to utility programs are allowed a lower CEER value, but must be in compliance and certified per EnergyStar version 4.0 requirements for connected equipment.

Public Review Draft

Proposed Addendum bj to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

First Public Review (March 2017)
(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).

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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 updates the requirements in the ASHRAE 189.1-2014 standard table B-6 Warm Air Furnace and Combination Warm Air Furnaces/Air-Conditioning Units, Warm Air Duct Furnaces, and Unit Heaters.

ASHRAE 90.1 has updated some of the references and notes and the table format so this addendum makes changes to make the two standards consistent.

DOE has also increased residential non-weatherized gas furnace efficiencies from 78% AFUE to 81% AFUE with an effective date of January 1, 2015 so this has been updated in the B-6 table. This is the only efficiency change being made.

Note: 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 bj to 189.1-2014

Delete the existing IP B-6 table and replace with the new table

~~TABLE B-6 (Supersedes Table 6.8.1-5 in ANSI/ASHRAE/IES Standard 90.1)~~
~~Warm-Air Furnace and Combustion Warm-Air Furnaces/Air-Conditioning Units, Warm-Air Duct Furnaces, and Unit Heaters (I-P)~~

~~Equipment Type~~	~~Size Category (Input)~~	~~Subcategory or Rating Condition~~	~~Test Procedure[b]~~	~~Minimum Efficiency[a]~~
~~Warm air furnace, gas fired (weatherized)~~	~~<225,000 Btu/h~~	~~Maximum capacity[d]~~	~~DOE 10 CFR Part 430 or ANSI Z21.47~~	~~78% AFUE or 80% E_t[c,e]~~
	~~>225,000 Btu/h~~	~~Maximum capacity[d]~~	~~ANSI Z21.47~~	~~80% E_c[c,e]~~
~~Warm air furnace, gas fired (nonweatherized)~~	~~<225,000 Btu/h~~	~~Maximum capacity[d]~~	~~DOE 10 CFR Part 430 or ANSI Z21.47~~	~~90% AFUE or 92% E_t[c,e]~~
	~~>225,000 Btu/h~~	~~Maximum capacity[d]~~	~~ANSI Z21.47~~	~~92% E_c[c,e]~~
~~Warm air furnace, oil fired (weatherized)~~	~~<225,000 Btu/h~~	~~Maximum capacity[d]~~	~~DOE 10 CFR Part 430 or UL 727~~	~~78% AFUE or 80% E_t[c,e]~~
	~~>225,000 Btu/h~~	~~Maximum capacity[d]~~	~~UL 727~~	~~81% E_t[e]~~
~~Warm air furnace, oil fired (nonweatherized)~~	~~<225,000 Btu/h~~	~~Maximum capacity[d]~~	~~DOE 10 CFR Part 430 or UL 727~~	~~85% AFUE or 87%% E_t[c,e]~~
	~~>225,000 Btu/h~~	~~Maximum capacity[d]~~	~~UL 727~~	~~87% E_t[e]~~
~~Warm air duct furnaces, gas fired (weatherized)~~	~~All capacities~~	~~Maximum capacity[d]~~	~~ANSI Z83.9~~	~~80% E_c[f]~~
~~Warm air duct furnaces, gas fired (nonweatherized)~~	~~All capacities~~	~~Maximum capacity[d]~~	~~ANSI Z83.9~~	~~90% E_c[f]~~
~~Warm air unit heaters, gas fired (nonweatherized)~~	~~All capacities~~	~~Maximum capacity[d]~~	~~ANSI Z83.8~~	~~90% E_c[f,g]~~
~~Warm air unit heaters, oil fired (nonweatherized)~~	~~All capacities~~	~~Maximum capacity[d]~~	~~UL 731~~	~~90% E_c[f,g]~~

~~a. E_t = thermal efficiency. See test procedure for detailed discussions.~~
~~b. Section 11 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.~~
~~c. Combustion units not covered by NAECA (three-phase power or cooling capacity greater than or equal to 65,000 Btu/h) is allowed to comply with either rating.~~
~~d. Minimum and maximum ratings as provided for and allowed by the unit's controls.~~
~~e. Units shall 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 flue damper. A vent damper is an acceptable alternative to the flue damper for those furnaces where combustion air is drawn from the *conditioned space*.~~
~~f. E_c = combustion efficiency (100% less flue losses). See test procedures for detailed discussion.~~
~~g. As of August 8, 2008, according to the Energy Policy Act of 2005, units shall also include an interrupted or intermittent ignition devices (IID) and have either power venting or *automatic* flue dampers. A vent damper is an acceptable alternative to a flue damper for those unit heaters where combustion air is drawn from the *conditioned space*.~~

Insert the following new IP B-6 table

Table B-6 (Supersedes Table 6.8.1-5 in ANSI/ASHRAE/IES Standard 90.1) Warm-Air Furnaces and Combination Warm-Air Furnaces/Air-Conditioning Units, Warm-Air Duct Furnaces, and Unit Heaters (IP)—Minimum *Efficiency* Requirements

Equipment Type	Size Category (Input)	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure[a]
Warm air furnace, gas fired (weatherized)	<225,000 Btu/h	Maximum capacity[c]	81% AFUE [b]	DOE 10 CFR Part 430 or Section 2.39, Thermal Efficiency, ANSI Z21.47
	≥225,000 Btu/h h		80% E_t[d]	Section 2.39, Thermal Efficiency, ANSI Z21.47
Warm furnace, gas fired (non weatherized)	<225,000 Btu/h	Maximum capacity[c]	90% AFUE or 92% E_t [b,d]	DOE 10 CFR Part 430 or Section 2.39, Thermal Efficiency, ANSI Z21.47
	≥225,000 Btu/h		92% E_t[d]	Section 2.39, Thermal Efficiency, ANSI Z21.47
Warm air furnace, oil fired (weatherized)	<225,000 Btu/h	Maximum capacity[c]	78% AFUE[b,d]	DOE 10 CFR Part 430 or Section 42, Combustion, UL 727
	≥225,000 Btu/h		81% E_t [d]	Section 42, Combustion, UL 727
Warm air furnace, oil fired (nonweatherized	<225,000 Btu/h	Maximum capacity[c]	85% AFUE or 87% E_t [b,d]	DOE 10 CFR Part 430 or Section 42, Combustion, UL 727
	≥225,000 Btu/h		87% E_t [d]	Section 42, Combustion, UL 727
Warm Air duct furnaces gas fired (weatherized)	All Capacities	Maximum capacity[c]	80% E_c[e]	Section 2.10, Efficiency, ANSI Z83.8
Warm Air duct furnaces gas fired (nonweatherized)	All Capacities	Maximum capacity[c]	90% E_c[e]	Section 2.10, Efficiency, ANSI Z83.8
Warm air unit heaters, gas fired (nonwetherized)	All Capacities	Maximum capacity[c]	80% E_c[ef]	Section 2.10, Efficiency, ANSI Z83.8
Warm air unit heaters, oil fired (wetherized)	All Capacities	Maximum capacity[c]	90% E_c[ef]	Section 40, Combustion, UL 731

a. Section 11 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
b. Combination units not covered by the U.S. Department of Energy Code of Federal Regulations 10 CFR 430 (three-phase power or cooling capacity greater than or equal to 65,000 Btu/h) may comply with either rating.
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. As of August 8, 2008, according to the *Energy* Policy Act of 2005, units must also include an interrupted or intermittent ignition device (IID) and have either power venting or an *automatic flue damper*.

Delete the existing SI table B-6 and replace with the new table

~~TABLE B-6 (Supersedes Table 6.8.1-5 in ANSI/ASHRAE/IES Standard 90.1)~~
~~Warm-Air Furnace and Combustion Warm-Air Furnaces/Air-Conditioning Units, Warm-Air Duct Furnaces, and Unit Heaters (SI)~~

~~Equipment Type~~	~~Size Category (Input)~~	~~Subcategory or Rating Condition~~	~~Test Procedure[b]~~	~~Minimum Efficiency[a]~~
~~Warm air furnace, gas fired (weatherized)~~	~~<65.9 kW~~	~~Maximum capacity[d]~~	~~DOE 10 CFR Part 430 or ANSI Z21.47~~	~~78% AFUE or 80% E_t[c,e]~~
	~~≥65.9 kW~~	~~Maximum capacity[d]~~	~~ANSI Z21.47~~	~~80% E_c[c,e]~~
~~Warm air furnace, gas fired (nonweatherized)~~	~~<65.9 kW~~	~~Maximum capacity[d]~~	~~DOE 10 CFR Part 430 or ANSI Z21.47~~	~~90% AFUE or 92% E_t[c,e]~~
	~~≥69.5 kW~~	~~Maximum capacity[d]~~	~~ANSI Z21.47~~	~~92% E_c[c,e]~~
~~Warm air furnace, oil fired (weatherized)~~	~~<69.5 kW~~	~~Maximum capacity[d]~~	~~DOE 10 CFR Part 430 or UL 727~~	~~78% AFUE or 80% E_t[c,e]~~
	~~≥69.5 kW~~	~~Maximum capacity[d]~~	~~UL 727~~	~~81% E_t[e]~~
~~Warm air furnace, oil fired (nonweatherized)~~	~~<69.5 kW~~	~~Maximum capacity[d]~~	~~DOE 10 CFR Part 430 or UL 727~~	~~85% AFUE or 87%% E_t[c,e]~~
	~~≥69.5 kW~~	~~Maximum capacity[d]~~	~~UL 727~~	~~87% E_t[e]~~
~~Warm air duct furnaces, gas fired (weatherized)~~	~~All capacities~~	~~Maximum capacity[d]~~	~~ANSI Z83.9~~	~~80% E_c[f]~~
~~Warm air duct furnaces, gas fired (nonweatherized)~~	~~All capacities~~	~~Maximum capacity[d]~~	~~ANSI Z83.9~~	~~90% E_c[f]~~
~~Warm air unit heaters, gas fired (nonweatherized)~~	~~All capacities~~	~~Maximum capacity[d]~~	~~ANSI Z83.8~~	~~90% E_c[f,g]~~
~~Warm air unit heaters, oil fired (nonweatherized)~~	~~All capacities~~	~~Maximum capacity[d]~~	~~UL 731~~	~~90% E_c[f,g]~~

~~a. E_t = thermal efficiency. See test procedure for detailed discussions.~~

~~b. Section 11 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.~~

~~c. Combustion units not covered by NAECA (three-phase power or cooling capacity greater than or equal to 19.0 kW) is allowed to comply with either rating.~~ ~~d. Minimum and maximum ratings as provided for and allowed by the unit's controls.~~

~~e. Units shall 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 flue damper. A vent damper is an acceptable alternative to the flue damper for those furnaces where combustion air is drawn from the *conditioned space*.~~

~~f. E_c = combustion efficiency (100% less flue losses). See test procedures for detailed discussion.~~

~~g. As of August 8, 2008, according to the Energy Policy Act of 2005, units shall also include an interrupted or intermittent ignition devices (IID) and have either power venting or *automatic* flue dampers. A vent damper is an acceptable alternative to a flue damper for those unit heaters where combustion air is drawn from the *conditioned space*.~~

Insert the following new B-6 SI table

Table B-6 (Supersedes Table 6.8.1-5 in ANSI/ASHRAE/IES Standard 90.1) Warm-Air Furnaces and Combination Warm-Air Furnaces/Air-Conditioning Units, Warm-Air Duct Furnaces, and Unit Heaters (IP)—Minimum *Efficiency* Requirements

Equipment Type	Size Category (Input)	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure[b,a]
Warm air furnace, gas fired (weatherized)	<65.9 kW	Maximum capacity[C]	78% AFUE or 80% E_t[b,d]	DOE 10 CFR Part 430 or Section 2.39, Thermal Efficiency, ANSI Z21.47
	≥65.9 kW		80% E_t[d]	Section 2.39, Thermal Efficiency, ANSI Z21.47
Warm furnace, gas fired (non weatherized)	<65.9 kW	Maximum capacity[C]	90% AFUE or 92% E_t[b,d]	DOE 10 CFR Part 430 or Section 2.39, Thermal Efficiency, ANSI Z21.47
	≥65.9 kW		92% E_t[d]	Section 2.39, Thermal Efficiency, ANSI Z21.47
Warm air furnace, oil fired (weatherized)	<65.9 kW	Maximum capacity[C]	78% AFUE or 80% E_t[b,d]	DOE 10 CFR Part 430 or Section 42, Combustion, UL 727
	≥65.9 kW		81% E_t[d]	Section 42, Combustion, UL 727
Warm air furnace, oil fired (nonweatherized	<65.9 kW	Maximum capacity[C]	85% AFUE or 87% E_t[b,d]	DOE 10 CFR Part 430 or Section 42, Combustion, UL 727
	≥65.9 kW		87% E_t[d]	Section 42, Combustion, UL 727
Warm Air duct furnaces gas fired (weatherized)	All Capacities	Maximum capacity[C]	80% E_c[e]	Section 2.10, Efficiency, ANSI Z83.8
Warm Air duct furnaces gas fired (nonweatherized)	All Capacities	Maximum capacity[C]	90% E_c[e]	Section 2.10, Efficiency, ANSI Z83.8
Warm air unit heaters, gas fired (nonwetherized)	All Capacities	Maximum capacity[C]	80% E_c[ef]	Section 2.10, Efficiency, ANSI Z83.8
Warm air unit heaters, oil fired (wetherized)	All Capacities	Maximum capacity[C]	90% E_c[ef]	Section 40, Combustion, UL 731

a. Section 11 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
b. Combination units not covered by the U.S. Department of Energy Code of Federal Regulations 10 CFR 430 (three-phase power or cooling capacity greater than or equal to 19 kW) may comply with either rating.
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. As of August 8, 2008, according to the *Energy* Policy Act of 2005, units must also include an interrupted or intermittent ignition device (IID) and have either power venting or an *automatic flue damper*.

Public Review Draft

Proposed Addendum bm to Standard 189.1-2014

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Except Low-Rise Residential Buildings

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FOREWORD

This addendum adds the option of modeling district energy systems under the energy performance path in Standard 189.1 that are not wholly contained within the project site boundary.

The most significant changes include:

- *allows optional modeling of district energy plant and distribution systems that serve the project building site but are partially or wholly located outside (or serve other buildings outside of) the project site boundary without the use of purchased district thermal utilities, allowing credit to be taken towards energy performance compliance with Standard 189.1 by constructing or connecting to efficient district energy systems*
- *methodology added for modeling of combined heat and power systems serving buildings covered by Standard 189.1*
- *making the modeling methodology of this optional performance path similar to the LEED supplementary document Treatment of District or Campus Thermal Energy in LEED V2 and LEED 2009: Design and Construction*
- *basic building-level compliance with ANSI/ASHRAE/IES Standard 90.1 still be achieved by modeling district energy as purchased utilities in a separate simulation run*
- *addition of new definitions in Section 3*

Note: 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 bm to Standard 189.1-2014

Modify Section 3 as follows:

3.2 Definitions

Combined heat and power system (CHP): an on-site or district energy conversion plant that delivers both electricity and thermal energy to the *building project*.

district energy plant: a centralized cooling and/or heating plant (e.g. centralized chiller or boiler plant) which distributes *district thermal utilities* to multiple buildings and loads, one of which being the *building project* site.

district energy system (DES): a district thermal energy system made up of one or more *district energy plants* and a *district thermal distribution system*.

district thermal utilities: district chilled water, hot water or steam systems that distribute utilities from a district energy plant to the *building project* site.

district thermal distribution system: a system for transporting *district thermal utilities* from a *district energy plant* to the *building project* site. The system includes all energy consuming equipment involved with transport including pumps, heat exchangers, water treatment, thermal losses and pressure control.

Modify Normative Appendix C as follows:

NORMATIVE APPENDIX C
PERFORMANCE OPTION FOR ENERGY EFFICIENCY

C1.3 Modeling of District Energy Systems. A *building project* served in whole or in part by *district thermal utilities* shall comply with either Section C1.3.1 or C1.3.2.

C1.3.1 Modeling Purchased *District Thermal Utilities.* The *proposed building performance* and *baseline building performance* shall be calculated using the cost of purchased *district thermal utilities* for compliance with Section 7.5.2(a) as defined in Standard 90.1 Sections G3.1.1.1, G3.1.1.2 and G3.1.1.3. CO_2e emission factors in Table 7.5.2B for *district thermal utilities* shall be used for compliance with Section 7.5.2(b).

C1.3.2 Performance Modeling of District Energy Systems. Two model simulation runs shall be completed for both the *proposed building performance* and *baseline building performance* in accordance with Sections C1.3.2(a) and C1.3.2(b).

a. The *proposed building performance* and *baseline building performance* shall be calculated using the cost of purchased *district thermal utilities* as defined in Standard 90.1 Sections G3.1.1.1, G3.1.1.2 and G3.1.1.3. The *proposed building performance* shall not exceed the *baseline building performance* using the requirements of Standard 90.1 Section 4.2.1 for *regulated energy use*.
b. Model the *district thermal utilities* in the building project using Standard 90.1 Normative Appendix G with the following additions and alterations. All *district energy system* demand from the *building project* site shall be modeled using time steps no longer than one hour.

Documentation of *district energy systems* in the *proposed building performance* model shall be provided in accordance with the *exceptional calculation methods* defined in Standard 90.1 Section G2.5. Projects shall comply with either Section C1.3.2(b)i or C1.3.2(b)ii.

i. **District Energy System Monitoring Path.** Data from energy metering equipment on an existing *district energy plant* shall be permitted to be used to derive energy performance. All input energy used to operate the *district energy plant* and all output district energy delivered by the *district thermal distribution system* shall be metered. All district energy plant monitoring equipment shall be in place for at least one full 12 month period. Metered energy performance figures shall be used for the *proposed building performance* model and shall be derived at a level of detail no longer than one month. The *baseline building performance* model shall be completed in accordance with the requirements outlined in Table C1.2.

ii. **District Energy System Modeling Path.** Complete the requirements of the *proposed* and *baseline building performance* models defined in Table C1.2.

TABLE C1.2 Performance Modeling of District Energy System Requirements

Proposed Building Performance	***Baseline Building Performance***
1. District Cooling Model all cooling systems at the *district energy plant* including energy conversion equipment and associated controls. Include all energy-using equipment, whether new or existing, that will impact the delivery of *district thermal utilities* to the *project building* site. Required systems include: • Chillers • Make-up water pumping • Primary pumping • Heat rejection loop pumping • Heat rejection fans • Water treatment and pressurization systems • Heat exchanger losses	Model on-site cooling plant or packaged cooling as defined in Standard 90.1 Normative Appendix G Tables G3.1.1-3 and G3.1.1-4 using energy performance values from Standard 90.1 Normative Appendix G.
2. District Heating Model all heating systems at the *district energy plant* including energy conversion equipment and associated controls. Include all energy-using equipment, whether new or existing, that will impact the delivery of *district thermal utilities* to the *project building* site. Required systems include: • Boilers • Make-up water pumping • Primary pumping	Model on-site heating plant or packaged heating as defined in Standard 90.1 Normative Appendix G Tables G3.1.1-3 and G3.1.1-4 using energy performance values from Standard 90.1 Normative Appendix G.

• Water treatment and pressurization equipment • Heat exchanger losses	
3. District Thermal Utilities Distribution System	
Model all thermal distribution equipment involved with transporting a thermal energy medium to the *project building* site. Required systems include: • Distribution and tertiary pumping • Heat exchanger and thermal distribution losses • Thermal distribution losses from leakage or non-return of distribution medium	Model thermal distribution systems in accordance with Standard 90.1 Normative Appendix G.
4. Combined Heat and Power Systems	
Model *combined heat and power systems* using the following methodology. Allocate the electricity generation from the CHP system to the *building project* site in proportion to the fraction of thermal loads to the building for the *district energy system* sources that use recovered waste heat. For each *district energy system* supplying the *building project* site, determine the fraction of the recovered waste heat applied to that source as well as the amount serving the *building project* site. Use equation C-1 to determine the amount of electricity generated from the CHP system to be applied to the *building project* site. Alternatively, use equation C-2 if the CHP system includes cooling generation from recovered heat. $$CHP\_ELEC_{BLDG} = (X_{HEAT} * BLDG_{HEAT}) * CHP\_ELEC_{TOTAL} \quad \text{(C-1)}$$ CHP_ELEC_{BLDG}= The CHP electricity generation allocated to the building X_{HEAT}= The fraction of the CHP plant's total production of waste heat applied to the DES directly	Do not model CHP.

$\boldsymbol{BLDG_{HEAT}}$= The fraction of total district heat provided to the building

$\boldsymbol{CHP\_ELEC_{TOTAL}}$= The total CHP electricity generated at the DES plant

$$\boldsymbol{CHP_{ELEC_{BLDG}}} = [(\boldsymbol{X_{HEAT}} * \boldsymbol{BLDG_{HEAT}}) + (\boldsymbol{Y_{CHW}} * \boldsymbol{BLDG_{CHW}}) + (\boldsymbol{Z_{SOURCE}} * \boldsymbol{BLDG_{SOURCE}})] * \boldsymbol{CHP\_ELEC_{TOTAL}} \quad \text{(C-2)}$$

$\boldsymbol{CHP\_ELEC_{BLDG}}$= (same as C-1 for simple case)

$\boldsymbol{X_{HEAT}}$= (same as C-1 for simple case)

$\boldsymbol{BLDG_{HEAT}}$= (same as C-1 for simple case)

$\boldsymbol{Y_{CHW}}$= The fraction of the CHP system's total production of waste heat applied to producing chilled water in the DES

$\boldsymbol{BLDG_{CHW}}$= The fraction of total district chilled water provided to the building

$\boldsymbol{Z_{SOURCE}}$= The fraction of the CHP system's total production of waste heat applied to the 3rd district energy source

$\boldsymbol{BLDG_{SOURCE}}$= The fraction of the 3rd district energy source that is provided to the building

$\boldsymbol{CHP\_ELEC_{TOTAL}}$= (same as C-1 for simple case)

5. Utility Tariffs

If using Section 7.5.2a, utility tariffs shall reflect the rates used on the *building project* site determined in accordance with Standard 90.1 Section G2.4.2.

Same as *proposed design*.

6. Carbon Dioxide Equivalent Factors

If using Section 7.5.2b, carbon dioxide equivalent factors shall reflect the values used in Table 7.5.2A and shall be applied uniformly for all *building project* and *district energy systems*.

Same as *proposed design*.

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Foreword

This addendum broadens and simplifies the existing definition of sidelighting effective aperture in Standard 189.1 in order to clarify its application in the prescriptive daylighting requirements in Section 8.4.1.2. The changes include the following:

- Replaces the term "windows" with "vertical fenestration." Vertical fenestration refers to both windows and glazed doors.
- Replaces the term "visible light transmittance" and "VLT" with "visible transmittance" and "VT."
- Defines VT directly in the definitions section rather than referring to ANSI/ASHRAE/IES Standard 90.1, including how VT is determined according to section 5.8.2.5 of Standard 90.1-2016.
- Adds VT to the list of abbreviations and acronyms in Section 3.3.

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Addendum bo to 189.1-2014

Modify Section 3 as follows:

3.2 Definitions

sidelighting effective aperture: the relationship of daylight transmitted through ~~windows~~ *vertical fenestration* to the *primary sidelighted areas*. The *sidelighting effective aperture* is calculated according to the following formula:

$$\sim\!\sim Sidelighting\ Effective\ Aperture = \frac{\sum Window\ Area \times Window\ VLT}{Area\ of\ Primary\ Sidelighted\ Area}\sim\!\sim$$

$$Sidelighting\ Effective\ Aperture = \frac{\sum Vertical\ Fenestration\ Area \times Vertical\ Fenestration\ VT}{Area\ of\ Primary\ Sidelighted\ Area}$$

where "~~Window VLT~~ *Vertical Fenestration* VT" is the visible ~~light~~ transmittance of ~~windows~~ *vertical fenestration* as determined in accordance with ~~Section 5.8.2.6 of ANSI/ASHRAE/IES Standard 90.1.~~ NFRC 200. For products outside of the scope of NFRC 200, VT is the solar photometric transmittance of the glazing material(s) determined in accordance with ASTM E972.

3.3 Abbreviations and Acronyms

VT visible transmittance

Modify Section 11 as follows:

11. NORMATIVE REFERENCES

Reference	Title	Section
ASTM International 100 Barr Harbor Dr. West Conshohocken, PA 19428-2959, United States 1-610-832-9585; www.astm.org		
ASTM E972-96 (2013)	Standard Test Method for Solar Photometric	3.2

	Transmittance of Sheet Materials Using Sunlight	
National Fenestration Rating Council (NFRC) 6305 Ivy Lane, Suite 140, Greenbelt, MD 20770-6323		
ANSI/NFRC 200-2014	Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence	3.2

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Foreword
This proposal updates the existing requirements for the emissions or VOC content in adhesives and sealants by updating references, adding accreditation requirements for testing laboratories (without changing the emissions testing or limit requirements) and clarifying the language related to the VOC content requirements.

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Addendum bp to 189.1-2014

8.4.2 Materials. Reported emissions or volatile organic compound (VOC) contents specified in the following subsections shall be from a representative product sample and conducted with each product reformulation or at a minimum of every three years. Products certified under third-party certification programs as meeting the specific emission or VOC content requirements listed in the following subsections are exempted from this three-year testing requirement but shall meet all the other requirements as listed.

Modify 8.4.2.1 as follows:

8.4.2.1 Adhesives and Sealants. Products in this category include carpet, resilient, and wood flooring adhesives; base cove adhesives; ceramic tile adhesives; drywall and panel adhesives; aerosol adhesives; adhesive primers; acoustical sealants; firestop sealants; HVAC air duct sealants, sealant primers; and caulks. All adhesives and sealants used on the interior of the building (defined as inside of the *weatherproofing system* and applied on-site) shall comply with the requirements of either Section 8.4.2.1.1 or 8.4.2.1.2:

8.4.2.1.1 Emissions Requirements. Emissions shall be determined according to CDPH/EHLB/Standard Method V1.1 (commonly referred to as California Section 01350) and shall comply with the limit requirements for either office or *classroom spaces* regardless of the *space* type. The emissions testing shall be performed by an ISO/IEC 17025 accredited laboratory that has the CDPH/EHLB/Standard Method V.1.1, U.S. EPA Method TO-17 and ASTM Standard Method D5197 within the scope of its accreditation. Third party certifiers shall be accredited to ISO/IEC 17065 and have the relevant certification program in the scope of accreditation.

8.4.2.1.2 VOC Content Requirements. ~~VOC content shall comply with and shall be determined according to the following limit requirements:~~
~~a.~~The VOC content of ~~A~~adhesives, sealants and sealant primers shall be determined and limited in accordance with~~:~~ SCAQMD Rule 1168. HVAC duct sealants shall be classified as "Other"category within the SCAQMD Rule 1168 sealants table.
~~b.~~The VOC content of~~A~~ aerosol adhesives shall be determined and limited in accordance with~~:~~ Section 3 of Green Seal Standard GS-36.
Exceptions to 8.4.2.1.2: The following solvent welding and sealant products are not required to meet the emissions or the VOC content requirements ~~listed above~~.
1. Cleaners, solvent cements, and primers used with plastic piping and conduit in plumbing, fire suppression, and electrical systems.
2. HVAC air duct sealants when the air temperature of the *space* in which they are applied is less than 40°F (4.5°C).

Modify Chapter 11 Normative References as follows:

ASTM International **100 Barr Harbor Dr.** **West Conshohocken, PA 19428-2959, United States** **1-610-832-9585; www.astm.org**		
ASTM D5197-09e1	Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology)	8.4.2, 10.3.1.4

California Department of Public Health (CDPH) **Indoor Air Quality Section** **850 Marina Bay Parkway** **Richmond, CA 94804, United States** **1-510-620-2802; www.cdph.ca.gov/programs/IAQ and www.cal-iaq.org**		
CDPH/EHLB/Standard Method v1.1 (2010)	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers—Version 1.1	8.4.2~~8.4.2.1.1, 8.4.2.2.1, 8.4.2.3, 8.4.2.4, 8.4.2.6~~, 8.5.2, Table 10.3.1.4, Appendix F
Green Seal **1001 Connecticut Avenue, NW, Suite 827** **Washington, DC 20036-5525, United States** **1-202-872-6400; www.greenseal.org**		
GS-36 (2.1) July 12, 2013	Standard for Adhesives for Commercial Use~~Adhesives~~	8.4.2.1.2
International Organization for Standardization (ISO) **ISO Central Secretariat, 1 rue de Varembee, Case postale 56** **CH-1211 Geneva 20, Switzerland** **+41-22-749-01-11; www.iso.org**		
ISO/IEC-17025-2005 (Reviewed 2010)	General requirements for the competence of testing and calibration laboratories	8.4.2
ISO/IEC 17065-2012	Conformity assessment – Requirements for bodies certifying products, processes and services	8.4.2
United States Environmental Protection Agency (EPA) **Ariel Rios Building** **1200 Pennsylvania Avenue, NW**		

Washington, DC 20460, United States 1-919-541-0800; www.epa.gov ENERGY STAR ® 1-888-782-7937 WaterSense 1-866-987-7367 and 1-202-564-2660		
U.S. EPA Method TO-17 (1999)	Determination of Volatile Organic Compounds in Ambient Air Using Active Sampling Onto Sorbent Tubes	8.4.2

Public Review Draft

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Foreword
This proposal updates the existing requirements for the emissions or VOC content for paints and coatings materials by adding accreditation requirements for testing laboratories(without changing the emissions testing or limit requirements), clarifying the language related to the VOC contents requirements and updating references.

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Addendum bq to 189.1-2014

8.4.2 Materials. Reported emissions or volatile organic compound (VOC) contents specified in the following subsections shall be from a representative product sample and conducted with each product reformulation or at a minimum of every three years. Products certified under third-party certification programs as meeting the specific emission or VOC content requirements listed in the following subsections are exempted from this three-year testing requirement but shall meet all the other requirements as listed.

Modify 8.4.2.2 as follows:

8.4.2.2 Paints and Coatings. Products in this category include anticorrosive coatings, basement specialty coatings, concrete/masonry sealers, concrete curing compounds, dry fog coatings, faux finishing coatings, fire-resistive coatings, flat and non-flat topcoats, floor coatings, graphic arts (sign) coatings, high-temperature coatings, industrial maintenance coatings, low solids coatings, mastic texture coatings, metallic pigmented coatings, multicolor coatings, pretreatment wash primers, primers, reactive penetrating sealers, recycled coatings, shellacs (clear and opaque),

specialty primers, stains, stone consolidants, swimming-pool coatings, tub- and tile-refining coatings, under coaters, waterproofing membranes, wood coatings (clear wood finishes), wood preservatives, and zinc primers. Paints and coatings used on the interior of the building (defined as inside of the *weatherproofing system* and applied on-site) shall comply with either Section 8.4.2.2.1 or 8.4.2.2.2.

8.4.2.2.1 Emissions Requirements. Emissions shall be determined according to CDPH/EHLB/Standard Method V1.1 (commonly referred to as California Section 01350) and shall comply with the limit requirements for either office or *classroom spaces* regardless of the *space* type. The emissions testing shall be performed by an ISO/IEC 17025 accredited laboratory that has the CDPH/EHLB/Standard Method V.1.1, U.S. EPA Method TO-17 and ASTM Standard Method D5197 within the scope of its accreditation. Third party certifiers shall be accredited to ISO/IEC 17065 and have the relevant certification program in the scope of accreditation.

8.4.2.2.2 Volatile Organic Compound (VOC) Content Requirements. ~~VOC content shall comply with and be determined according to the following limit requirements:~~

~~a.~~ The VOC content for ~~F~~flat and non-flat ~~top coats~~ coatings, non-flat high gloss coatings, specialty coatings, basement specialty coatings, concrete/masonry sealers, fire resistive coatings, floor coatings ~~paints~~, low-solids coatings, primers, sealers and under-coaters , ~~and anticorrosive~~ rust preventative coatings, shellacs (clear and opaque), stains, wood coatings, ~~and~~ reflective wall coatings, varnishes, conjugated oil varnish, lacquer, and clear brushing laquer shall be determined and limited in accordance with~~:~~ Green Seal Standard GS-11

~~b.~~ The VOC content for ~~C~~concrete/masonry sealers ~~(waterproofing concrete/masonry sealers)~~, concrete curing compounds, dry fog coatings, faux finishing coatings, ~~fire resistive coatings, floor coatings~~ ,graphic arts ~~(sign)~~ coatings (sign paints), industrial maintenance coatings, mastic texture coatings, metallic pigmented coatings, multicolor coatings, pretreatment wash primers, reactive penetrating sealers, recycled coatings, ~~shellacs (clear and opaque),~~ specialty primers, ~~stains, wood coatings (clear wood finishes)~~, wood preservatives, and zinc primers shall be determined and limited in accordance with the~~:~~ California Air Resources Board Suggested Control Measure for Architectural Coatings or SCAQMD Rule 1113r

~~c.~~ The VOC content for ~~Basement specialty coatings~~, high-temperature coatings~~, low solids coatings~~, stone consolidants, swimming-pool coatings, tub- and tile-refinishing coatings, and waterproofing membranes primers shall be determined and limited in accordance with the~~:~~ California Air Resources Board Suggested Control Measure for Architectural Coatings.

Modify Chapter 11 Normative References as follows:

ASTM International **100 Barr Harbor Dr.** **West Conshohocken, PA 19428-2959, United States** **1-610-832-9585; www.astm.org**		
ASTM D5197-09e1	Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology)	8.4.2, 10.3.1.4
California Department of Public Health (CDPH) **Indoor Air Quality Section** **850 Marina Bay Parkway** **Richmond, CA 94804, United States** **1-510-620-2802; www.cdph.ca.gov/programs/IAQ and www.cal-iaq.org**		
CDPH/EHLB/Standard Method v1.1(2010)	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers—Version 1.1	8.4.2~~8.4.2.1.1, 8.4.2.2.1, 8.4.2.3, 8.4.2.4, 8.4.2.6~~, 8.5.2, Table 10.3.1.4, Appendix F
Green Seal **1001 Connecticut Avenue, NW, Suite 827** **Washington, DC 20036-5525, United States** **1-202-872-6400; www.greenseal.org**		
GS-11(3.2), ~~July 12, 2013~~ October 26, 2016	~~Environmental~~ Green Seal Standard for Paints ,~~and~~ Coatings, Stains, and Sealers. Section 3.0: "Product-Specific Health and Environmental Requirements"	8.4.2.2.2
International Organization for Standardization (ISO) **ISO Central Secretariat, 1 rue de Varembee, Case postale 56**		

CH-1211 Geneva 20, Switzerland **+41-22-749-01-11; www.iso.org**		
ISO/IEC-17025-2005 (Reviewed 2010)	General requirements for the competence of testing and calibration laboratories	8.4.2
ISO/IEC 17065-2012	Conformity assessment – Requirements for bodies certifying products, processes and services	8.4.2
South Coast Air Quality Management District (SCAQMD) **California Air Resources Board** **1001 "I" Street** **P.O. Box 2815** **Sacramento, CA 95812, United States** **1-916-322-2990; www.arb.ca.gov**		
SCAQMD Rule 1113r, Amended ~~June 3, 2011~~ February 5, 2016	Architectural Coatings	8.4.2.2
United States Environmental Protection Agency (EPA) **Ariel Rios Building** **1200 Pennsylvania Avenue, NW** **Washington, DC 20460, United States** **1-919-541-0800; www.epa.gov** **ENERGY STAR ® 1-888-782-7937** **Water Sense 1-866-987-7367 and 1-202-564-2660**		
U.S. EPA Method TO-17 (1999)	Determination of Volatile Organic Compounds in Ambient Air Using Active Sampling Onto Sorbent Tubes	8.4.2

Public Review Draft

Proposed Addendum br to Standard 189.1-2014

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Except Low-Rise Residential Buildings

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(Draft Shows Proposed Changes to Current Standard)

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Foreword
This proposal updates the existing requirements for the emissions for floor covering materials by adding accreditation requirements for testing laboratories (without changing the emissions testing or limit requirements), updating product categories to be consistent with CDPH/EHLB v1.1, adding a list of materials that are deemed to comply and updating references.

Note: 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 br to 189.1-2014

8.4.2 Materials. Reported emissions or volatile organic compound (VOC) contents specified in the following subsections shall be from a representative product sample and conducted with each product reformulation or at a minimum of every three years. Products certified under third-party certification programs as meeting the specific emission or VOC content requirements listed in the following subsections are exempted from this three-year testing requirement but shall meet all the other requirements as listed.

Modify 8.4.2.3 as follows:

8.4.2.3 Floor Covering Materials

~~Floor covering materials installed in the building interior shall comply with the following:~~

~~a. Carpet: Carpet shall be tested in accordance with and shown to be compliant with the requirements of CDPH/EHLB/Standard Method v1.1 (commonly referred to as California Section 01350). Products that have been verified and labeled to be in compliance with~~

~~Section 9 of CDPH/EHLB/Standard Method v1.1 (commonly referred to as California Section 01350) comply with this requirement.~~

~~b. Hard surface flooring in office *spaces* and *classrooms*: Materials shall be tested in accordance with and shown to be compliant with the requirements of CDPH/EHLB/Standard Method v1.1 (commonly referred to as California Section 01350).~~

Emissions of floor covering materials installed in the building interior and each product layer within a flooring system containing more than one distinct product layer shall be individually determined according to CDPH/EHLB/Standard Method V1.1 (commonly referred to as California Section 01350) and shall comply with the limit requirements for either office or *classroom spaces* regardless of the *space* type. The emissions testing shall be performed by an ISO/IEC 17025 accredited laboratory that has the CDPH/EHLB/Standard Method V.1.1, U.S. EPA TO-17 and ASTM Standard Method D5197 within the scope of its accreditation. Third party certifiers shall be accredited to ISO/IEC 17065 and have the relevant certification program in the scope of accreditation.

8.4.2.3.1 Deemed to comply. Floor covering materials that are composed of materials listed in Table 8.4.2.3.1 shall be deemed to comply with the requirements of Section 8.4.2.3. Where these products include integral organic-based surface coatings, binders, or sealants, or are installed using adhesives, sealants, paints, or coatings, those products shall be subject to other requirements of Section 8.4.2.

TABLE 8.4.2.3.1
Floor Covering Deemed to Comply with VOC Emission Limits

Ceramic and concrete tile
Natural stone
Gypsum plaster
Clay masonry
Concrete masonry
Concrete
Metal

Modify Chapter 11 Normative References as follows:

ASTM International **100 Barr Harbor Dr.** **West Conshohocken, PA 19428-2959, United States** **1-610-832-9585; www.astm.org**		
ASTM D5197-09e1	Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology)	8.4.2, 10.3.1.4
California Department of Public Health (CDPH) **Indoor Air Quality Section** **850 Marina Bay Parkway** **Richmond, CA 94804, United States** **1-510-620-2802; www.cdph.ca.gov/programs/IAQ and www.cal-iaq.org**		
CDPH/EHLB/Standard Method v1.1(2010)	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers—Version 1.1	8.4.28.4.2.1.1, 8.4.2.2.1, 8.4.2.3, 8.4.2.4, 8.4.2.6, 8.5.2, Table 10.3.1.4, Appendix F
International Organization for Standardization (ISO) **ISO Central Secretariat, 1 rue de Varembee, Case postale 56** **CH-1211 Geneva 20, Switzerland** **+41-22-749-01-11; www.iso.org**		
ISO/IEC-17025-2005 (Reviewed 2010)	General requirements for the competence of testing and calibration laboratories	8.4.2
ISO/IEC 17065-2012	Conformity assessment –	8.4.2

	Requirements for bodies certifying products, processes and services	
United States Environmental Protection Agency (EPA) **Ariel Rios Building** **1200 Pennsylvania Avenue, NW** **Washington, DC 20460, United States** **1-919-541-0800; www.epa.gov** **ENERGY STAR ® 1-888-782-7937** **WaterSense 1-866-987-7367 and 1-202-564-2660**		
U.S. EPA Method TO-17 (1999)	Determination of Volatile Organic Compounds in Ambient Air Using Active Sampling Onto Sorbent Tubes	8.4.2

Public Review Draft

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Foreword
This proposal updates the existing requirements for the emissions for ceiling and wall assemblies by modifying the list of materials covered, adding a separate subsection on insulation, adding a list of materials that are deemed to comply, adding accreditation requirements for testing laboratories (without changing the emissions testing or limit requirements) and updating references.

Note: 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 bs to 189.1-2014

8.4.2 Materials. Reported emissions or volatile organic compound (VOC) contents specified in the following subsections shall be from a representative product sample and conducted with each product reformulation or at a minimum of every three years. Products certified under third-party certification programs as meeting the specific emission or VOC content requirements listed in the following subsections are exempted from this three-year testing requirement but shall meet all the other requirements as listed.

Modify 8.4.2.6 as follows:

8.4.2.6 Ceiling and *Wall* Assemblies and Systems. ~~These~~ Ceiling and wall assemblies and systems include ~~ceiling and *wall* insulation~~ acoustical treatments, ceiling panels and tiles, gypsum panel products, tackable wall panels and coverings, ~~gypsum *wall* board and panels, and~~ *wall* coverings, and wall and ceiling paneling and planking. Emissions from~~for~~ these assemblies and systems ~~products~~ shall be determined according to CDPH/EHLB/Standard Method V1.1

(commonly referred to as California Section 01350) and shall comply with the limit requirements for either office or *classroom spaces* regardless of the *space* type. The emissions testing shall be performed by an ISO/IEC 17025 accredited laboratory that has the CDPH/EHLB/Standard Method V.1.1, U.S. EPA TO-17 and ASTM Standard Method D5197 within the scope of its accreditation. Third party certifiers shall be accredited to ISO/IEC 17065 and have the relevant certification program in the scope of accreditation.

8.4.2.6.1 Deemed to comply. Ceiling and wall assemblies and systems that are composed of materials listed in Table 8.4.2.6.1 shall be deemed to comply with the requirements of Section 8.4.2.6. Where these products include integral organic-based surface coatings, binders, or sealants, or are installed using adhesives, sealants, paints, or coatings, those products shall be subject to other ~~provisions in Chapter 8.~~requirements of Section 8.4.2

TABLE 8.4.2.6.1
Ceiling and Wall Products Deemed to Comply with VOC Emission Limits

Ceramic and concrete tile
Natural stone
Gypsum plaster
Clay masonry
Concrete masonry
Concrete
Metal

Add 8.4.2.7 as follows:

8.4.2.7 Insulation. Emissions shall be determined according to CDPH/EHLB/Standard Method V1.1 (commonly referred to as California Section 01350) and shall comply with the limit requirements for either office or *classroom spaces* regardless of the *space* type. The emissions testing shall be performed by an ISO/IEC 17025 accredited laboratory that has the CDPH/EHLB/Standard Method V.1.1, U.S. EPA TO-17 and ASTM Standard Method D5197 within the scope of its accreditation. Third party certifiers shall be accredited to ISO/IEC 17065 and have the relevant certification program in the scope of accreditation.

Modify Chapter 11 Normative References as follows:

ASTM International **100 Barr Harbor Dr.** **West Conshohocken, PA 19428-2959, United States** **1-610-832-9585; www.astm.org**		
ASTM D5197-09e1	Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology)	8.4.2, 10.3.1.4
California Department of Public Health (CDPH) **Indoor Air Quality Section** **850 Marina Bay Parkway** **Richmond, CA 94804, United States** **1-510-620-2802; www.cdph.ca.gov/programs/IAQ and www.cal-iaq.org**		
CDPH/EHLB/Standard Method v1.1(2010)	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers—Version 1.1	8.4.28.4.2.1.1, 8.4.2.2.1, 8.4.2.3, 8.4.2.4, 8.4.2.6, 8.5.2, Table 10.3.1.4, Appendix F
International Organization for Standardization (ISO) **ISO Central Secretariat, 1 rue de Varembee, Case postale 56** **CH-1211 Geneva 20, Switzerland** **+41-22-749-01-11; www.iso.org**		
ISO/IEC-17025-2005 (Reviewed 2010)	General requirements for the competence of testing and calibration laboratories	8.4.2
ISO/IEC 17065-2012	Conformity assessment – Requirements for bodies certifying products, processes and services	8.4.2
United States Environmental Protection Agency (EPA) **Ariel Rios Building** **1200 Pennsylvania Avenue, NW**		

Washington, DC 20460, United States 1-919-541-0800; www.epa.gov ENERGY STAR ® 1-888-782-7937 WaterSense 1-866-987-7367 and 1-202-564-2660		
U.S. EPA Method TO-17 (1999)	Determination of Volatile Organic Compounds in Ambient Air Using Active Sampling Onto Sorbent Tubes	8.4.2

Public Review Draft

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FOREWORD

This addendum updates requirements for building envelope airtightness testing in Standard 189.1 based on changes in ASHRAE/ANSI/IES Standard 90.1-2016. Note that ASHRAE/ANSI/IES Standard 90.1 now includes a new Section 5.9.2.2 on inspection and verification, which essentially meets the same intent of the options in 189.1-2014 sections 10 3.1.2.5 (a) and (b). This addendum resolves any differences between Standards 189.1 and 90.1.

This addendum allows additional whole building pressurization (air leakage) test methods in addition to those that are allowed in ASHRAE/ANSI/IES Standard 90.1-2016. The addendum does not allow testing on portions of buildings as in ASHRAE/ANSI/IES Standard 90.1-2016, Exception 1 of 5.4.3.1.3(a), because of the difficulty in isolating portions of buildings during the test; this methodology has not been verified and is not part of any standard method of test. Exception 2 of 5.4.3.1.3(a) is allowed, but with lower air leakage rates. The addendum also requires that when using the verification program option of ASHRAE/ANSI/IES Standard 90.1, the design review must be done by a third party, as already required in 189.1-2014.

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Addendum bt to 189.1-2014

Modify Section 7.3.1.1 as follows:

7.3.1.1 ***Continuous Air Barrier***. The exceptions to the requirement for a continuous air barrier in Section 5.4.3.1 of ANSI/ASHRAE/IES Standard 90.1 for specific climate zones and constructions shall not apply. The testing criteria of Section 10.3.1.2.5(a) shall supersede Section 5.4.3.1.3(a) of ANSI/ASHRAE/IES Standard 90.1.

Modify Section 10.3.1.2.5 as follows:

10.3.1.2.5 ***Building Envelope*** **Airtightness.** *Building envelope* airtightness shall comply with ANSI/ASHRAE/IES Standard 90.1 ~~one of~~ with the following modifications and additions. Air leakage verification shall be determined in accordance with ANSI/ASHRAE/IES Standard 90.1, Section 5.9.2.2.

a. When implementing the testing option in ANSI/ASHRAE IES Standard 90.1 Section 5.9.2.2(b) and Section 5.4.3.1.3(a), ~~W~~whole building pressurization testing shall be:
   1. ~~c~~Conducted in accordance with ASTM E779, ASTM E1827, CAN/CGSB-149.10-~~M86~~, CAN/CGSB-149.15~~-96,~~ ISO 9972, or equivalent by an independent third party.
   2. The measured air leakage rate of the *building envelope* shall not exceed 0.25 cfm/ft^2 (1.25 L/s·m^2) under a pressure differential of 0.3 in. of water~~wc~~ (75 Pa), with this air leakage rate normalized by the sum of the above- and below-grade *building envelope* areas of the *conditioned* and *semiheated space.*
   3. Exception (1.) to 5.4.3.1.3(a) is not allowed.
   4. Exception (2.) to 5.4.3.1.3(a) is allowed where the measured air leakage rate exceeds 0.25 (1.25 L/s·m^2) cfm/ft^2 but does not exceed 0.40 cfm/ft^2 (2.0 L/s·m^2).

b. When implementing the verification program option in ANSI/ASHRAE IES Standard 90.1 Section 5.9.2.2(a), the air barrier design review shall be performed by an independent third party.~~An air barrier commissioning program consistent with *generally accepted engineering standards* that consists of the following elements shall be implemented:~~
   ~~1. A third-party design review shall be conducted and documented to assess the design documentation describing the air barrier systems and materials, the manner in which continuity will be maintained across joints between air barrier components and at all envelope penetrations, and the constructability of the air barrier systems.~~
   ~~2. Incremental field inspection and testing of air barrier components shall be conducted and documented during construction to ensure proper construction of key components while they are still accessible for inspection and repair.~~

Add to Chapter 11. Normative References:

ASTM E1827-11	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door	10.3.1.2.5

ISO 9972-2015	Thermal performance of buildings -- Determination of air permeability of buildings -- Fan pressurization method	10.3.1.2.5

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FOREWORD

This addendum updates the requirements for table B-4 for Electrically Operated Packaged Terminal Air Conditioners, and Packaged Terminal Heat Pumps. The table is being updated because ASHRAE 90.1-2016 table 6.8.1-4 has been revised for increased efficiencies for PTAC air conditioners.

There are no industry defined higher tier requirements for PTAC units but a review of the AHRI directory indicates that there are a significant number of models that have higher efficiencies than the current ASHRAE 90.1-2016 numbers so a slight improvement of 0.4 has been made to the ASHRAE 90.1-2016 new construction requirements but replacement was not changed due to the replacement market space constraints. A study of the AHRI directory indicated that a significant number of product models can comply with this requirement.

Also some editorial errors in the IP and SI tables have been correct.

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Addendum bw to 189.1-2014

Delete the current IP table B4 and replace with a new table.

~~TABLE B-4 (Supersedes Table 6.8.1-4 in ANSI/ASHRAE/IES Standard 90.1)~~
~~Electrically-Operated Packaged Terminal Air-Conditioners, Packaged Terminal Heat Pumps, Single Packaged Vertical Air Conditioners, Single Packaged Vertical Heat Pumps, Room Air-Conditioners, and Room Air-Conditioner Heat Pumps—Minimum Efficiency Requirements (I-P)~~

~~Equipment Type~~	~~Size Category Size Category(Input)~~	~~Subcategory or Rating Condition~~	~~Minimum Efficiency~~	~~Test Procedure[a]~~
~~PTAC (cooling mode) new construction~~	~~<7,000 Btu/h~~	~~95 ºF db outdoor air~~	~~11.9 EER~~	~~ARI 310/380~~
	~~≥7,000 Btu/h and <10,000 Btu/h~~	~~95 ºF db outdoor air~~	~~11.3 EER~~	
	~~≥10,000 Btu/h and <13,000 Btu/h~~	~~95 ºF db outdoor air~~	~~10.7 EER~~	
	~~≥13,000 Btu/h~~	~~95 ºF db outdoor air~~	~~9.5 EER~~	
~~PTAC (cooling mode) replacement[b]~~	~~<7,000 Btu/h~~	~~95 ºF db outdoor air~~	~~11.9 EER~~	~~ARI 310/380~~
	~~≥7,000 Btu/h and <10,000 Btu/h~~	~~95 ºF db outdoor air~~	~~11.3 EER~~	
	~~≥10,000 Btu/h and <13,000 Btu/h~~	~~95 ºF db outdoor air~~	~~10.7 EER~~	
	~~≥13,000 Btu/h~~	~~95 ºF db outdoor air~~	~~9.5 EER~~	
~~PTHP (cooling mode) new construction~~	~~<7,000 Btu/h~~	~~95 ºF db outdoor air~~	~~11.7 EER~~	~~ARI 310/380~~
	~~≥7,000 Btu/h and <10,000 Btu/h~~	~~95 ºF db outdoor air~~	~~11.1 EER~~	
	~~≥10,000 Btu/h and <13,000 Btu/h~~	~~95 ºF db outdoor air~~	~~10.5 EER~~	
	~~≥13,000 Btu/h~~	~~95 ºF db outdoor air~~	~~9.3 EER~~	
~~PTHP (heating mode) new constructions~~	~~All capacities~~	~~95 ºF db outdoor air~~	~~2.8 COP~~	~~ARI 310/380~~
~~PTHP (cooling mode) replacement[b]~~	~~<7,000 Btu/h~~	~~95 ºF db outdoor air~~	~~11.7 EER~~	~~ARI 310/380~~
	~~≥7,000 Btu/h and <10,000 Btu/h~~	~~95 ºF db outdoor air~~	~~11.1 EER~~	
	~~≥10,000 Btu/h and <13,000 Btu/h~~	~~95 ºF db outdoor air~~	~~10.5 EER~~	
	~~≥13,000 Btu/h~~	~~95 ºF db outdoor air~~	~~9.3 EER~~	
~~PTHP (heating mode) replacement[b]~~	~~All capacities~~	~~95 ºF db outdoor air~~	~~2.8 COP~~	~~ARI 310/380~~

~~Section 11 contains a complete specification of the referenced test procedures, including year version of the test procedure.~~
~~b. Replacement units shall be factory labeled as follows:"MANUFACTURED FOR REPLACEMENT APPLICATIONS ONLY;NOT TO BE INSTALLED IN NEW CONSTRUCTION PROJECTS." Replacement efficiencies apply only to units with existing sleeves less than 16 in. high and less than 42 in. wide.~~

Replace IP table B-4 with the following.

TABLE B-4 (Supersedes Table 6.8.1-4 in ANSI/ASHRAE/IES Standard 90.1)
Electrically Operated Single Packaged Vertical Air Conditioners and Single Packaged Vertical Heat Pumps Air-Conditioner Heat Pumps—Minimum Efficiency Requirements (I-P)

Equipment Type	Size Category Size Category(Input)	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure[a]
PTAC (cooling mode) standard size	All capacities	95 ºF db outdoor air	14.4 – (0.300 x Cap/1000)[c] EER	AHRI 310/380
PTAC (cooling mode) non standard size[b]	All capacities	95 ºF db outdoor air	10.9-(0.213 x Cap/1000)[C] EER	AHRI 310/380
PTHP (cooling mode) standard size	All capacities	95 ºF db outdoor air	14.4 – (0.300 x Cap/1000)[c] EER	ARI 310/380
PTHP (cooling mode) non standard size[b]	<7,000 Btu/h	95 ºF db outdoor ai	10.8-(0.213 x Cap/1000)[C] EER	ARI 310/380
PTHP (heating mode) new constructions	All capacities	47°F db/43°F wb outdoor air	3.7 – (0.052 × Cap/1000)[C] COP_H	ARI 310/380
PTHP (heating mode) non standard size[b]	All capacities	47°F db/43°F wb outdoor air	2.9 – (0.026 × Cap/1000)[C] COP_H	ARI 310/380

Section 11 contains a complete specification of the referenced test procedures, including year version of the test procedure.
b. Replacement units shall be factory labeled as follows: "MANUFACTURED FOR REPLACEMENT APPLICATIONS ONLY; NOT TO BE INSTALLED IN NEW CONSTRUCTION PROJECTS." Replacement efficiencies apply only to units with existing sleeves less than 16 in. high and less than 42 in. wide and having a cross-sectional area less than 670 in.2.
c. "Cap" means the rated cooling capacity of the product in Btu/h. If the unit's capacity is less than 7000 Btu/h, use 7000 Btu/h in the calculation. If the unit's capacity is greater than 15,000 Btu/h, use 15,000 Btu/h in the calculation.

Delete the current SI table B4 and replace with a new table.

TABLE B-4 (Supersedes Table 6.8.1-4 in ANSI/ASHRAE/IES Standard 90.1)
Electrically-Operated Packaged Terminal Air-Conditioners, Packaged Terminal Heat Pumps, Single Packaged Vertical Air Conditioners, Single Packaged Vertical Heat Pumps, Room Air-Conditioners, and Room Air-Conditioner Heat Pumps—Minimum Efficiency Requirements (I-P)

Equipment Type	Size Category Size Category(Input)	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure[a]
PTAC (cooling mode) new construction	<2.0 kW	35 ºC db outdoor air	3.49 COP_C	ARI 310/380
	≥2.0 kW and <2.9 kW	35 ºC db outdoor air	3.31 COP_C	
	≥2.9 kW and <3.8 kW	35 ºC db outdoor air	3.14 COP_C	
	≥3.8 kW	35 ºC db outdoor air	3.48 COP_C	
PTAC (cooling mode) replacement[b]	<2.0 kW	35 ºC db outdoor air	3.49 COP_C	ARI 310/380
	≥2.0 kW and <2.9 kW	35 ºC db outdoor air	3.31 COP_C	
	≥2.9 kW and <3.8 kW	35 ºC db outdoor air	3.14 COP_C	
	≥3.8 kW	35 ºC db outdoor air	3.48 COP_C	
PTHP (cooling mode) new construction	<2.0 kW	35 ºC db outdoor air	3.48 COP_C	ARI 310/380
	≥2.0 kW and <2.9 kW	35 ºC db outdoor air	3.48 COP_C	
	≥2.9 kW and <3.8 kW	35 ºC db outdoor air	3.48 COP_C	
	≥3.8 kW	35 ºC db outdoor air	3.48 COP_C	
PTHP (heating mode) new constructions	All capacities	35 ºC db outdoor air	2.8 COP_H	ARI 310/380
PTHP (cooling mode) replacement[b]	<2.0 kW	35 ºC db outdoor air	3.43 COP_C	ARI 310/380
	≥2.0 kW and <2.9 kW	35 ºC db outdoor air	3.25 COP_C	
	≥2.9 kW and <3.8 kW	35 ºC db outdoor air	3.08 COP_C	
	≥3.8 kW	35 ºC db outdoor air	3.73 COP_C	
PTHP (heating mode) replacement[b]	All capacities	35 ºC db outdoor air	2.8 COP_H	ARI 310/380

Section 11 contains a complete specification of the referenced test procedures, including year version of the test procedure.
b. Replacement units shall be factory labeled as follows:"MANUFACTURED FOR REPLACEMENT APPLICATIONS ONLY;NOT TO BE INSTALLED IN NEW CONSTRUCTION PROJECTS." Replacement efficiencies apply only to units with existing sleeves less than 16 in. high and less than 42 in. wide.

Insert the following SI table B-4.

TABLE B-4 (Supersedes Table 6.8.1-4 in ANSI/ASHRAE/IES Standard 90.1)
Electrically Operated Single Packaged Vertical Air Conditioners and Single Packaged Vertical Heat Pumps Air-Conditioner Heat Pumps—Minimum Efficiency Requirements (SI)

Equipment Type	Size Category Size Category(Input)	Subcategory or Rating Condition	Minimum Efficiency	Test Procedure[a]
PTAC (cooling mode) standard size	All capacities	35 ºC db outdoor air	4.22 – (0.300 x Cap/1000)[c] COP_C	AHRI 310/380
PTAC (cooling mode) non standard size[b]	All capacities	35 ºC db outdoor air	3.19-(0.213 x Cap/1000)[C] COP_C	AHRI 310/380
PTHP (cooling mode) standard size	All capacities	35 ºC db outdoor air	4.22 – (0.300 x Cap/1000)[c] COP_C	ARI 310/380
PTHP (cooling mode) non standard size[b]	< 2.1 kW	35 ºC db outdoor air	3.16-(0.213 x Cap/1000)[C] COP_C	ARI 310/380
PTHP (heating mode) new constructions	All capacities	8.3°C db/6.1°C wb outdoor air	3.7 – (0.052 × Cap/1000)[C] COP_H	ARI 310/380
PTHP (heating mode) non standard size[b]	All capacities	8.3°C db/6.1°C wb outdoor air	2.9 – (0.026 × Cap/1000)[C] COP_H	ARI 310/380

Section 11 contains a complete specification of the referenced test procedures, including year version of the test procedure.
b. Replacement units shall be factory labeled as follows: "MANUFACTURED FOR REPLACEMENT APPLICATIONS ONLY; NOT TO BE INSTALLED IN NEW CONSTRUCTION PROJECTS." Replacement efficiencies apply only to units with existing sleeves less than 0.45 m. high and less than 1.0 m. wide and having a cross-sectional area less than 0.43 m^2.
c. "Cap" means the rated cooling capacity of the product in kW. If the unit's capacity is less than 2.1 kW, use 2.1 kW in the calculation. If the unit's capacity is greater than 4.4 kW, use 4.4 kW in the calculation.

Public Review Draft

Proposed Addendum bx to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

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FOREWORD

This addendum makes changes to table B-8, Performance Requirements for Heat-Rejection Equipment to update some of the efficiency requirements to align with changes in the industry.

In Table 6.8.1-7 in ASHRAE 90.1-2014 the efficiency requirements for Propeller or axial fan closed-circuit cooling towers is set at ≥16.1 gpm/hp while in ASHRAE 189.1-2014 table B-8 the efficiency is list as ≥15.0 gpm/hp so the B-8 table needs to be updated to the higher efficiency requirement.

In Title 24 2016 for Propeller or axial fan open-circuit cooling towers the efficiency level has been increased to 42.1 gpm/hp vs the efficiency level shown in table B-8 at 40.2 gpm/hp so the addendum will increase the ASHRAE 189.1 B-8 efficiency level to align with the new Title 24 efficiency level for this product class. ASHRAE 90.1-2016 has an efficiency level of 40.2 which is slightly lower. Because ASHRAE 189.1 is a higher tier standard and considering that Title 24 has been thru public review it was felt that the higher level of Title 24 should be used for ASHRAE 189.1.

Note: 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 bx to 189.1-2014

Modify the IP table B-8 as shown below

TABLE B-8 (Supersedes Table 6.8.1-7 in ANSI/ASHRAE/IES Standard 90.1)
Performance Requirements for Heat-Rejection Equipment (I-P)

Equipment Type	Total System Heat Rejection Capacity at Rated Conditions	Subcategory or Rating Conditions[g]	Performance Required [a,b,c,d,e,f,i]	Test Procedure[h]
Propeller or axial fan open-circuit cooling towers	All	95°F entering water 85°F leaving water 75°F entering wb	~~≥40.2~~ 42.1gpm/hp	CTI ATC-105 and CTI STD-201RS
Centrifugal fan open-circuit cooling towers	All	95°F entering water 85°F leaving water 75°F entering wb	≥22.0 gpm/hp	CTI ATC-105and CTI STD-201RS
Propeller or axial fan closed-circuit cooling towers	All	102°F entering water 90°F leaving water 75°F entering wb	~~≥15.0~~ 16.1gpm/hp	CTI ATC-105S and CTI STD-201RS
Centrifugal fan closed-circuit cooling towers	All	102°F entering water 90°F leaving water 75°F entering wb	≥8.0 gpm/hp	CTI ATC-105S and CTI STD-201RS
Propeller or axial fan evaporative condensers	All	Ammonia test fluid 140°F entering gas temperature 96.3°F condensing temperature 75°F entering wb	≥134,000 Btu/h·hp	CTI ATC-106
Centrifugal fan evaporative condensers	All	Ammonia test fluid 140°F entering gas temperature 96.3°F condensing temperature 75°F entering wb	≥110,000 Btu/h·hp	CTI ATC-106
Propeller or axial fan evaporative condensers	All	R-507A test fluid 165°F entering gas temperature 105°F condensing temperature 75°F entering wb	≥157,000 Btu/h·hp	CTI ATC-106
Centrifugal fan evaporative condensers	All	R-507A test fluid 165°F entering gas temperature 105°F condensing temperature 75°F entering wb	≥135,000 Btu/h·hp	CTI ATC-106
Air-cooled condensers	All	190°F entering gas temperature 125°F condensing temperature 15°F subcooling 95°F entering wb	≥176,000 Btu/h hp	AHRI 460

a. For purposes of this table, open-circuit cooling tower performance is defined as the water flow rating of the tower at the thermal rating condition listed in Table B-8 divided by the fan motor nameplate power.
b. For purposes of this table, closed-circuit cooling tower performance is defined as the process water flow rating of the tower at the thermal rating condition listed in Table B-8 divided by the sum of the fan motor nameplate power and the integral spray pump motor nameplate power.
c. For purposes of this table, evaporative condenser performance is defined as the heat rejected at the specified rating condition in the table divided by the sum of the fan motor nameplate power and the integral spray pump nameplate power.
d. For purposes of this table, air-cooled condenser performance is defined as the heat rejected from the refrigerant divided by the fan motor nameplate power.
e. The efficiencies and test procedures for both open- and closed-circuit cooling towers are not applicable to hybrid cooling towers that contain a combination of separate wet and dry heat exchange sections. The certification requirements do not apply to field erected cooling towers.
f. All cooling towers, closed-circuit coolers, evaporative condensers, and air-cooled condensers shall comply with the minimum efficiency listed in the table for that specific type of equipment with the capacity effect of any project specific accessories and/or options included with the equipment.
g. Requirements for evaporative condensers are listed with ammonia (R-717) and R-507A as test fluids in the table. Evaporative condensers intended for use with halocarbon refrigerants other than R-507A must meet the minimum efficiency requirements listed for R-507A as the test fluid.
h. Informative Appendix G contains information on the referenced test procedures.
i. Not applicable for air-cooled condensers applied to condenserless chillers. The air-cooled condenser and condenserless chiller shall comply with the requirements for air-cooled chillers as defined in Table B-3.

Modify the SI table B-8 as shown below

TABLE B-8 (Supersedes Table 6.8.1-7 in ANSI/ASHRAE/IES Standard 90.1)
Performance Requirements for Heat-Rejection Equipment (SI)

Equipment Type	Total System Heat Rejection Capacity at Rated Conditions	Subcategory or Rating Conditions[g]	Performance Required [a,b,c,d,e,f,i]	Test Procedure[h]
Propeller or axial fan open-circuit cooling towers	All	35°C entering water 29.4°C leaving water 23.9°C entering wb	~~≥3.40~~ 3.56 L/s kW	CTI ATC-105 and CTI STD-201RS
Centrifugal fan open-circuit cooling towers	All	35°C entering water 29.4°C leaving water 23.9°C entering wb	≥1.86 L/s kW	CTI ATC-105and CTI STD-201RS
Propeller or axial fan closed-circuit cooling towers	All	38.9°C entering water 32.2°C leaving water 23.9°C entering wb	~~≥1.27~~ 1.36 L/s kW	CTI ATC-105S and CTI STD-201RS
Centrifugal fan closed-circuit cooling towers	All	38.9°C entering water 32.2°C leaving water 23.9°C entering wb	≥0.68 L/s kW	CTI ATC-105S and CTI STD-201RS
Propeller or axial fan evaporative condensers	All	Ammonia test fluid 60°C entering gas temperature 35.7°C condensing temperature 23.9°C entering wb	≥52.6 COP	CTI ATC-106
Centrifugal fan evaporative condensers	All	Ammonia test fluid 73.9°C entering gas temperature 40.6°C condensing temperature 23.9°C entering wb	≥43.2 COP	CTI ATC-106
Propeller or axial fan evaporative condensers	All	R-507A test fluid 73.9°C entering gas temperature 40.6°C condensing temperature 23.9°C entering wb	≥61.7 COP	CTI ATC-106
Centrifugal fan evaporative condensers	All	R-507A test fluid 73.9°C entering gas temperature 40.6°C condensing temperature 23.9°C entering wb	≥53.1 COP	CTI ATC-106
Air-cooled condensers	All	88°C entering gas temperature 52°C condensing temperature 8°CF subcooling 35°C entering wb	≥69.0 COP	AHRI 460

j. For purposes of this table, open-circuit cooling tower performance is defined as the water flow rating of the tower at the thermal rating condition listed in Table B-8 divided by the fan motor nameplate power.
k. For purposes of this table, closed-circuit cooling tower performance is defined as the process water flow rating of the tower at the thermal rating condition listed in Table B-8 divided by the sum of the fan motor nameplate power and the integral spray pump motor nameplate power.
l. For purposes of this table, evaporative condenser performance is defined as the heat rejected at the specified rating condition in the table divided by the sum of the fan motor nameplate power and the integral spray pump nameplate power.
m. For purposes of this table, air-cooled condenser performance is defined as the heat rejected from the refrigerant divided by the fan motor nameplate power.
n. The efficiencies and test procedures for both open- and closed-circuit cooling towers are not applicable to hybrid cooling towers that contain a combination of separate wet and dry heat exchange sections. The certification requirements do not apply to field erected cooling towers.
o. All cooling towers, closed-circuit coolers, evaporative condensers, and air-cooled condensers shall comply with the minimum efficiency listed in the table for that specific type of equipment with the capacity effect of any project specific accessories and/or options included with the equipment.
p. Requirements for evaporative condensers are listed with ammonia (R-717) and R-507A as test fluids in the table. Evaporative condensers intended for use with halocarbon refrigerants other than R-507A must meet the minimum efficiency requirements listed for R-507A as the test fluid.
q. Informative Appendix G contains information on the referenced test procedures.
r. Not applicable for air-cooled condensers applied to condenserless chillers. The air-cooled condenser and condenserless chiller shall comply with the requirements for air-cooled chillers as defined in Table B-3.

Public Review Draft

Proposed Addendum bz to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

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FOREWORD

This addendum updates tables in appendix B. Where tables exist that are not either exactly the same as similar product tables in ASHRAE 90.1-2016 or that are not less efficient that tables that have been updated in ASHRAE 90.1-2016 and no higher tier CEE, EnergyStar or other industry tables exist for higher efficiencies then this addendum will delete the tables and refer back to the ASHRAE 90.1-2016 tables. This specifically applies to the following tables.

- *Table B-3 Water-Chilling Packages*
- *Table B-10 Commercial Refrigerator and Freezers*
- *Table B-14 Commercial Refrigeration Minimum Efficiency Requirements*
- *Table B-15 Low-Voltage Dry-Type Distribution Transformers*

Where ASHRAE 90.1-2016 has added new efficiency requirements and for products not listed in tables in Appendix B of ASHRAE 189.1-2014 then this addendum will specifically reference these tables as well as the equivalent tables that are being deleted. The tables in ASHRAE 90.1 that will be referenced are

- *Table 6.8.1-3 Water-Chilling Packages—Minimum Efficiency Requirement,*
- *Table 6.8.1-11 Air Conditioners and Condensing Units Serving Computer Rooms—Minimum Efficiency Requirements*
- *Table 6.8.1-12 Commercial Refrigerator and Freezers—Minimum Efficiency Requirements—Minimum Efficiency Requirements*
- *Table 6.8.1-13 Commercial Refrigeration—Minimum Efficiency Requirements—Minimum Efficiency Requirements*
- *Table 6.8.1-14 Vapor Compression Based Indoor Pool Dehumidifiers—Minimum Efficiency Requirements*
- *Table 6.8.1-15 Electrically Operated DX-DOAS Units, Single-Package and Remote Condenser, without Energy Recovery—Minimum Efficiency Requirements*
- *Table 6.8.1-16 Electrically Operated DX-DOAS Units, Single Package and Remote Condenser, with Energy Recovery—Minimum Efficiency Requirements*
- *Table 10.8-1 Minimum Nominal Full-Load Efficiency for NEMA Design A, NEMA Design B, and IEC Design N Motors(Excluding Fire Pump Electric Motors)*
- *Table 10.8-2 Minimum Nominal Full-Load Efficiency for NEMA Design C and IEC Design H Motors*
- *Table 10.8-3 Minimum Average Full-Load Efficiency for Polyphase Small Electric Motors*
- *Table 10.8-4 Minimum Average Full-Load Efficiency for Capacitor-Start Capacitor-Run and Capacitor-Start Induction-Run Small Electric Motors*
- *Table 10.8-5 Minimum Nominal Full-Load Efficiency for Fire Pump Electric Motors*

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Note: 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 bz to 189.1-2014

Delete the following IP and SI tables

Table B-3 Water-Chilling Packages
Table B-10 Commercial Refrigerator and Freezers
Table B-14 Commercial Refrigeration Minimum Efficiency Requirements
Table B-15 Low-Voltage Dry-Type Distribution Transformers

Revise Section 7.4.3.1 as follows:

7.4.3.1 Minimum Equipment Efficiencies for the Alternate Renewables Approach. All building projects complying with the Alternate Renewables Approach in Section 7.4.1.1.2 shall comply with the applicable equipment efficiency requirements in Normative Appendix B and the applicable ENERGY STAR requirements in Section 7.4.7.3.2. Where equipment efficiency is not defined/listed in Normative Appendix B or in Section 7.4.7.3.2, the equipment shall meet the minimum efficiency requirements defined/listed in ASHRAE/ANSI/IES Standard 90.1. Specifically this applies to the following products in these tables in ASHRAE/ANSI/IES Standard 90.1;

- Table 6.8.1.3 Water-Chilling Packages—Minimum Efficiency Requirements
- Table 6.8.1-11 Air Conditioners and Condensing Units Serving Computer Rooms—Minimum Efficiency Requirements
- Table 6.8.1-12 Commercial Refrigerator and Freezers—Minimum Efficiency Requirements—Minimum Efficiency Requirements
- Table 6.8.1-13 Commercial Refrigeration—Minimum Efficiency Requirements—Minimum Efficiency Requirements
- Table 6.8.1-14 Vapor Compression Based Indoor Pool Dehumidifiers—Minimum Efficiency Requirements
- Table 6.8.1-15 Electrically Operated DX-DOAS Units, Single-Package and Remote Condenser, without Energy Recovery—Minimum Efficiency Requirements
- Table 6.8.1-16 Electrically Operated DX-DOAS Units, Single Package and Remote Condenser, with Energy Recovery—Minimum Efficiency Requirements
- Table 10.8-1 Minimum Nominal Full-Load Efficiency for NEMA Design A, NEMA Design B, and IEC Design N Motors (Excluding Fire Pump Electric Motors)
- Table 10.8-2 Minimum Nominal Full-Load Efficiency for NEMA Design C and IEC Design H Motors
- Table 10.8-3 Minimum Average Full-Load Efficiency for Polyphase Small Electric Motors
- Table 10.8-4 Minimum Average Full-Load Efficiency for Capacitor-Start Capacitor-Run and Capacitor-Start Induction-Run Small Electric Motors
- Table 10.8-5 Minimum Nominal Full-Load Efficiency for Fire Pump Electric Motors

Public Review Draft

Proposed Addendum cb to Standard 189.1-2014

Standard for the Design of High-Performance Green Buildings

Except Low-Rise Residential Buildings

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FOREWORD

This addendum clarifies the first sentence of the section on irrigation system controls. Another addendum (au) is in process and proposes changes to other requirements of this section. These two addenda are independent of one another; this addendum is only about clarifying the language of the first sentence and impacts no other requirements.

Note: 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 cb to 189.1-2014

Modify section 6.3.1.3 on irrigation system controls:

6.3.1.3 Controls. ~~Any~~ Irrigation system<u>s</u> for ~~the~~ project *site<u>s</u>* shall be controlled by a qualifying *smart controller* that uses *evapotranspiration* (*ET*) and weather data to adjust irrigation schedules and <u>that includes</u> ~~that complies with the minimum requirements or~~ an on-site rain or moisture sensor that automatically shuts <u>off</u> the system ~~off~~ after a predetermined amount of rainfall or sensed moisture in the soil. Qualifying *smart controllers* shall meet the minimum requirements, as listed below, when tested in accordance with IA *SWAT* Climatologically-Based Controllers, 8th Testing Protocol. *Smart controllers* that use *ET* shall use the following inputs for calculating appropriate irrigation amounts;

a. *Irrigation adequacy*—80% minimum *ETc*.
b. *Irrigation excess*—not to exceed 10%.

Exception to 6.3.1.3: A temporary irrigation system used exclusively for the establishment of new landscape shall be exempt from this requirement. Temporary irrigation systems

shall be removed or permanently disabled at such time as the *landscape establishment period* has expired.

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

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

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FOREWORD

This addendum updates the reference standard used to determine the properties of a "cool" roof. A copy of the standard is publically available at http://coolroofs.org/documents/ANSI-CRRC_S100-2016_Final_2016-04-26.pdf .

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Addendum b to 90.1-2016

Revise the Standard as follows (IP and SI Units) Revise the Standard as follows (IP and SI Units)

Chapter 5
(Modify the reference to the CRRC standard as follows)

5.5.3.1.1 Roof Solar Reflectance and Thermal Emittance
Roofs in Climate Zones 0 through 3 shall have one of the following:

a. A minimum three-year-aged solar *reflectance* of 0.55 and a minimum three-year-aged thermal *emittance* of 0.75 when tested in accordance with ~~CRRC-1~~ **CRRC S100** Standard.
b. A minimum Solar Reflectance Index of 64 when determined in accordance with the Solar Reflectance Index method in ASTM E1980 using a convection coefficient of 2.1 Btu/h·ft2·°F, based on three-year-aged solar *reflectance* and three-year-aged thermal *emittance* tested in accordance with ~~CRRC-1~~ **CRRC S100** Standard.
c. Increased *roof* insulation levels found in Table 5.5.3.1.1.

The values for three-year-aged solar *reflectance* and three-year-aged thermal *emittance* shall be determined by a laboratory accredited by a nationally recognized accreditation organization and shall be *labeled* and certified by the *manufacturer*.

Exceptions to 5.5.3.1.1
1. Ballasted *roofs* with a minimum stone *ballast* of 17 lb/ft2 or 23 lb/ft2 pavers.
2. *Vegetative roof systems* that contain a minimum thickness of 2.5 in. of growing medium and covering a minimum of 75% of the *roof* area with durable plantings.
3. *Roofs* where a minimum of 75% of the *roof* area
   a. is shaded during the peak sun angle on June 21 by permanent components or features of the *building*;
   b. is covered by offset photovoltaic arrays, *building*-integrated photovoltaic arrays, or solar air or water collectors; or

c. is permitted to be interpolated using a combination of 1 and 2 above.

4. Steep-sloped *roofs.*

5. Low-sloped *metal building roofs* in Climate Zones 2 and 3.

6. *Roofs* over ventilated attics, *roofs* over *semiheated spaces*, or *roofs* over *conditioned spaces* that are not *cooled spaces.*

7. Asphaltic membranes in Climate Zones 2 and 3.

Chapter 12 Normative Reference

(Modify Chapter 12 as follows)

Cool Roof Rating Council (CRRC) ~~1610 Harrison Street, Oakland, CA 94612~~ 449 15th Street, Suite 400 Oakland, CA 94612 United States	
ANSI/CRRC~~-1 Standard 2012~~ S100-2016	~~Cool Roof Rating Council – ANSI/CRRC-1 Standard~~ Standard Test Methods for Determining Radiative Properties of Materials

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

Public Review Draft

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

First Public Review (March 2017)
(Draft shows Proposed Changes to Current Standard)

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FOREWORD

This proposed addendum clarifies that rooftop monitors are included in the definitions of fixed and operable metal framed vertical fenestration. This proposed addendum has no impact on cost effectiveness.

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Addendum c to 90.1-2016

Revise the Standard as follows (IP and SI Units)

vertical fenestration: all *fenestration* other than *skylights*. Trombe *wall* assemblies, where glazing is installed within 12 in. of a *mass wall*, are considered *walls*, not *fenestration*. For the purposes of determining *building envelope* requirements, the *vertical fenestration* classifications are defined as follows:

…

metal framing, fixed: all types of *vertical fenestration*, other than *entrance door* and *operable*, including, but not limited to, curtain *walls*, window *walls*, *fixed* windows, picture windows, glass block *walls*, nonopenable clerestory windows, roof monitors with nonopenable windows, and nonopenable sidelights and transoms.

metal framing, operable: all *vertical fenestration* that opens, except *entrance doors*, including, but not limited to, casement windows, projecting windows, pivoting windows, horizontal sliding windows, vertical sliding windows, openable clerestory windows, openable sidelights and transoms, sliding glass *doors*, roof monitors with nonopenable windows, and *doors* that are not *entrance doors*.

(other definitions remain unchanged)

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

Public Review Draft

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

First Public Review (March 2017)
(Draft shows Proposed Changes to Current Standard)

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FOREWORD

During the development of the 2016 Standard, changes were made to make the Appendix G methodology more useful for projects that undergo phased permitting. For those projects future work was assumed to comply with the current prescriptive requirements instead of the baseline requirements. The intent is that future work will neither credit nor penalize the rating for the current scope of work. To accomplish this, changes were made in various sections of Appendix G. However, the change was omitted from Table G3.1 1c. where it still states that future building components should be modeled in the proposed design the same as the baseline. This addendum fixes that omission making Table G3.1 1c consistent with the remainder of Appendix G.

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Addendum d to 90.1-2016

Revise the Standard as follows (IP and SI Units)

Table G3.1 Modeling Requirements for Calculating Proposed and Baseline Building Performance

Proposed Design **(Column A)** ***Design Energy Cost*** **(DEC)**	***Budget Building Design*** **(Column B)** ***Energy Cost Budget*** **(ECB)**
1. Design Model	
… c. When the *performance rating method* is applied to *buildings* in which *energy*-related features have not yet been designed (e.g., a *lighting system*), those yet-to-be-designed features shall be ~~described~~ modeled in the *proposed design* ~~exactly as they are defined in the *baseline building design*~~ to comply with, but not exceed the requirements of this Standard as described in Table G3.1 parts 6, 10, 11, and 12. Where the *space* classification for a *space* is not known, the *space* shall be categorized as an office *space*.	

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

Public Review Draft

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

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FOREWORD

Since the baseline HVAC and service water heating systems in Appendix G are no longer dependent on the proposed design, a requirement that those systems are different from the proposed design only under a specific circumstance is no longer needed and is removed.

For HVAC systems, Appendix G clearly states that piping losses shall not be modeled in the proposed and baseline measure. This addendum adds the same approach for piping for service-water heating.

Note: 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 e to 90.1-2016

Revise the Standard as follows (IP and SI Units)

Table G3.1 Modeling Requirements for Calculating Proposed and Baseline Building Performance

Proposed Design **(Column A)** ***Design Energy Cost*** **(DEC)**	***Budget Building Design*** **(Column B)** ***Energy Cost Budget*** **(ECB)**
11. *Service Water-Heating Systems*	
… <u>f. Piping losses shall not be modeled.</u>	The *service water-heating system* in the *baseline building* *design* shall be as specified in Table G3.1.1-2 and conform with the following conditions: … ~~d. Where a combined *system* has been specified to meet both *space* heating and *service water heating* loads, the baseline *building system* shall use separate *systems* meeting the minimum *efficiency* requirements applicable to each *system* individually.~~ <u>i. Piping losses shall not be modeled.</u> *Renumber as necessary*

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

Public Review Draft

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

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FOREWORD

Appendix G allows the modeler to combine multiple thermal zones into a single thermal block under certain conditions. This results in larger HVAC equipment sizes for zonal systems which have efficiencies dependent on capacity. The proposed change will require that the capacity used for selecting the system efficiency represents that for the size of the actual zone instead of the size of the zones as combined into a single thermal block.

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Addendum f to 90.1-2016

Revise the Standard as follows (IP and SI Units)

G3.1.2.1 Equipment Efficiencies

All HVAC *equipment* in the *baseline building design* shall be modeled at the minimum *efficiency* levels, both part load and full load, in accordance with Tables G3.5.1 through G3.5.6. Where multiple *HVAC zones* or *residential spaces* are combined into a single *thermal block* in accordance with Table G3.1, the efficiencies (for baseline HVAC System Types 1, 2, 3, 4, 9, and 10) taken from Tables G3.5.1, G3.5.2, G3.5.4, and G3.5.5 shall be based on the equipment capacity of the *thermal block* divided by the number of *HVAC zones* or *residential spaces*. HVAC System Types 5 or 6 efficiencies taken from Table G3.5.1 shall be based on the cooling equipment capacity of a single floor when grouping identical floors in accordance with Section G3.1.1.a.4.

Chillers shall use Path A efficiencies as shown in Table 6.8.1-3. Where *efficiency* ratings include supply fan *energy*, the *efficiency* rating shall be adjusted to remove the supply fan *energy*. For Baseline *HVAC Systems* 1, 2, 3, 4, 5, and 6, calculate the minimum $COP_{nfcooling}$ and $COP_{nfheating}$ using the equation for the applicable performance rating as indicated in Tables 6.8.1-1 through 6.8.1-4. Where a full- and part-load *efficiency* rating is provided in Tables 6.8.1-1 through 6.8.1-4, the full-load equation below shall be used:

$$COP_{\text{nfcooling}} = 7.84\text{E-}8 \times EER \times Q + 0.338 \times EER$$

$$COP_{\text{nfcooling}} = -0.0076 \times \text{SEER}^2 + 0.3796 \times SEER$$

$$COP_{\text{nfheating}} = 1.48\text{E-}7 \times COP_{47} \times Q + 1.062 \times COP_{47}$$

(applies to heat pump heating *efficiency* only)

$$COP_{\text{nfheating}} = -0.0296 \times \text{HSPF}^2 + 0.7134 \times HSPF$$

where $COP_{nfcooling}$ and $COP_{nfheating}$ are the packaged HVAC *equipment* cooling and heating *energy efficiency*, respectively, to be used in the *baseline building design*, which excludes supply fan power, and Q is the AHRI-rated cooling capacity in Btu.

EER, *SEER*, *COP*, and *HSPF* shall be at AHRI test conditions. Fan *energy* shall be modeled separately according to Section G3.1.2.9.

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

Public Review Draft

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

First Public Review (March 2017)
(Draft shows Proposed Changes to Current Standard)

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FOREWORD

Standard 62.1-2016 now allows zero ventilation in occupied standby mode for some occupancy categories including classrooms and offices (see TABLE 6.2.2.1 Minimum Ventilation Rates in Breathing Zone). 90.1 section 9.4.1.1 (see TABLE 9.6.1) already requires occupancy sensors for lighting control in certain spaces including classrooms, conference rooms, and small, enclosed offices. So the stars are now aligned to capture tremendous global energy savings by reducing deadband airflow and thereby reducing fan energy, cooling energy and reheat.

In the user's manual we will clarify that for a zone to be unoccupied all spaces in that zone must be unoccupied. For example, if a zone consists of 3 perimeter private offices, then all 3 offices must be unoccupied for the zone to be considered unoccupied. The user's manual will also explain that if a zone is served by a dedicated outdoor air system (DOAS) and a separate cooling system then the DOAS flow to that zone must shut off and stay shut off when the zone is vacant and within deadband. If it drifts outside the deadband while still unoccupied then the DOAS flow is allowed to come back on but should not come on if doing so uses more energy, i.e. the separate cooling system should cycle on/off to meet the setup temperature setpoint in occupied standby mode without bringing on the ventilation.

The rationale for the setback/up is to nudge the zone into deadband in case the normal temperature controls have the zone perched just outside deadband. California Title 24 actually requires a 2F standby setup/setback for some spaces and a 5F standby setup/setback for others. We feel anything more than 1F could be a significant comfort problem (the space temperature cannot instantly snap back when someone returns from lunch, like the lights do) which leads to occupants defeating the controls. Aggressive setup/setback also has minimal energy savings. The lighting, people, and ventilation loads are gone in standby mode and the envelope/plug loads typically need to be met either in standby or when the space returns to occupied mode. Large setbacks can actually use more energy than small ones because zones go to max heating or cooling to recover which wreaks the resets for SAT setpoint, duct static pressure setpoint, et .

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Addendum g to 90.1-2016

Revise the Standard as follows (IP and SI Units) Revise the Standard as follows (IP and SI Units)

Add the following definition to Section 3.2:

occupied-standby mode: when a zone is scheduled to be occupied and an occupant sensor indicates zero population within the zone.

Modify Section 6 as follows:

6.3.2 Criteria. The HVAC system must meet all of the following criteria:

. . .

q. The system shall comply with the demand control ventilation requirements in Section 6.4.3.8, Occupied Standby Controls in 6.4.3.9, and ventilation design in 6.5.3.6.

6.4.3.9 Occupied Standby Controls. Zones serving only room(s) that are required to have Automatic Partial OFF or Automatic Full OFF lighting controls per section 9.4.1.1, and where the ASHRAE Standard 62.1 occupancy category permits ventilation air to be reduced to zero when the space is in *occupied-standby mode*, shall meet the following within 5 minutes of all room(s) in that zone entering *occupied-standby mode*.

a) Active heating setpoint shall be setback at least 1ºF (0.5ºC), and

b) Active cooling setpoint shall be setup at least 1ºF (0.5ºC), and

c) All airflow supplied to the zone shall be shut-off whenever the space temperature is between the active heating and cooling set points

Exception to 6.4.3.9:

1. Multiple zone systems without automatic zone flow control dampers

NOTE: this requires renumbering of the current 6.4.3.9 thru 6.4.3.12 sections

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

Public Review Draft

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

First Public Review (March 2017)
(Draft shows Proposed Changes to Current Standard)

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FOREWORD

This addendum is a clarification for the ERV requirements. There has been confusion as to whether heating or cooling design should be used for sizing an ERV. The intention of the original proposal is that the ERV equipment provided will meet the greater recovery requirement of either heating or cooling, unless one mode is specifically excluded for the climate zone by exception.

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Addendum h to 90.1-2016

Revise the standard as follows (IP and SI units)

6.5.6.1 *Revise the Standard as follows (IP and SI Units)* Exhaust Air Energy Recovery

Each fan *system* shall have an *energy* recovery *system* when the design supply fan airflow rate exceeds the value listed in Tables 6.5.6.1-1 and 6.5.6.1-2, based on the climate zone and percentage of *outdoor air* at design airflow conditions. Table 6.5.6.1-1 shall be used for all *ventilation systems* that operate less than 8000 hours per year, and Table 6.5.6.1-1 shall be used for all *ventilation systems* that operate 8000 or more hours per year.

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 below. 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

Exceptions to 6.5.6.1

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. Where more than 60% of the *outdoor air* heating *energy* is provided from *site-recovered energy* or *site-solar energy*.
4. Heating *energy* recovery in Climate Zones 0, 1, and 2.
5. Cooling *energy* recovery 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 airflow 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. *Systems* requiring dehumidification that employ *energy* recovery in series with the cooling coil.

8. *Systems* expected to operate less than 20 hours per week at the *outdoor air* percentage covered by Table 6.5.6.1-1

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

Public Review Draft

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FOREWORD

In a traditional water source heat pump loop during colder months, a boiler is used to add heat to the loop. During the summer months, a closed circuit cooling tower or open circuit cooling tower with a plate and frame heat exchanger is used to reject excess heat from the loop. When the process fluid is circulating to an idle closed circuit cooling tower during the colder months, a portion of the loop heat can be lost to the ambient. To minimize this heat loss, either the closed circuit cooling tower is valved out of the system (for all but a minimal flow for freeze protection) or positive closure dampers are placed on the unit in Climate Zones 3 through 8.

A coil shed type closed circuit cooling tower where the coil is enclosed on all four sides such that there is no airflow over the coil has no heat loss due to natural convection. Therefore, this class of closed circuit cooling tower does not require the use of either an automatic bypass valve or positive closure damper hood as would other closed circuit cooling towers, including non-enclosed coil shed type units. An exception to the requirements of 6.5.2.2.3b for coil shed type closed circuit cooling towers with enclosed coils has been added on this basis.

Lastly, the IP version was corrected for the reference to the dead band in Exception 1 (so the value agrees with the dead band value in 6.5.2.2.3a.

[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 i to 90.1-2016

Modify the standard as follows (IP Units)

6.5.2.2.3 Hydronic (Water Loop) Heat Pump Systems

Hydronic heat pumps connected to a common heat pump water loop with central devices for heat rejection (e.g., cooling tower) and heat addition (e.g., *boiler*) shall have the following:

a. *Controls* that are capable of and configured to provide a heat pump water supply temperature *dead band* of at least 20°F between initiation of heat rejection and heat addition by the central devices (e.g., tower and *boiler*).

b. For Climate Zones 3 through 8, if a closed-circuit cooling tower (fluid cooler) is used, either an *automatic* valve shall be installed to bypass all but a minimal flow of water around the tower (for freeze protection) or low-leakage positive closure dampers shall be provided. If an open-circuit cooling tower is used directly in the heat pump loop, an *automatic* valve shall be installed to bypass all heat pump water flow around the tower. If an open-circuit cooling tower is used in conjunction with a separate heat exchanger to isolate the tower from the heat pump loop then heat loss shall be controlled by shutting down the circulation pump on the cooling tower loop.

Exceptions to 6.5.2.2.3

1. Where a *system* loop temperature optimization controller is used to determine the most efficient operating temperature based on real-time conditions of *demand* and capacity, *dead bands* of less than 20°F shall be allowed.
2. Coil shed type closed circuit cooling towers with redistribution water pans and walls on all sides of the coil such that there is no airflow over the coil do not require the modifications described in 6.5.2.2.3b for closed circuit cooling tower

Modify the standard as follows (SI Units)

6.5.2.2.3 Hydronic (Water Loop) Heat Pump Systems

Hydronic heat pumps connected to a common heat pump water loop with central devices for heat rejection (e.g., cooling tower) and heat addition (e.g., *boiler*) shall have the following:

a. *Controls* that are capable of and configured to provide a heat pump water supply temperature *dead band* of at least 11°C between initiation of heat rejection and heat addition by the central devices (e.g., tower and *boiler*).
b. For Climate Zones 3 through 8, if a closed-circuit cooling tower (fluid cooler) is used, either an *automatic* valve shall be installed to bypass all but a minimal flow of water around the tower (for freeze protection) or low-leakage positive closure dampers shall be provided. If an open-circuit cooling tower is used directly in the heat pump loop, an *automatic* valve shall be installed to bypass all heat pump water flow around the tower. If an open-circuit cooling tower is used in conjunction with a separate heat exchanger to isolate the tower from the heat pump loop then heat loss shall be controlled by shutting down the circulation pump on the cooling tower loop.

Exceptions to 6.5.2.2.3

3. Where a *system* loop temperature optimization controller is used to determine the most efficient operating temperature based on real-time conditions of *demand* and capacity, *dead bands* of less than ~~12~~11°F shall be allowed.
4. Coil shed type closed circuit cooling towers with redistribution water pans and walls on all sides of the coil such that there is no airflow over the coil do not require the modifications described in 6.5.2.2.3b for closed circuit cooling tower

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

Public Review Draft

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

First Public Review (March 2017)
(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.

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

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FOREWORD

This addendum addresses a possible loophole to Demand Controlled Ventilation requirements in mild climates. It is sometimes less expensive to install an energy recovery system at air handlers than to install DCV controls at each zone. But in climates where energy recovery is not required, they offer very poor energy savings and may in fact have negative savings due to fan energy penalties. This addendum therefore only allows the energy recovery exception where energy recovery is cost effective, i.e. where it is required by Section 6.5.6.

Note: 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 j to 90.1-2016

Revise the standard as follows (IP units)

6.4.3.8 Ventilation Controls for High-Occupancy Areas

Demand control ventilation (*DCV*) is required for *spaces* larger than 500 ft^2 and with a design occupancy for *ventilation* of ≥25 people per 1000 ft^2 of *floor* area and served by *systems* with one or more of the following:

a. *Air economizer*.
b. *Automatic* modulating *control* of *outdoor air* damper.
c. Design outdoor airflow greater than 3000 cfm.

Exceptions to 6.4.3.8

1. *Systems* with exhaust air *energy* recovery complying with <u>and where required by</u> Section *6.5.6.1*.
2. Multiple-zone *systems* without *DDC* of individual zones communicating with a central *control* panel.
3. *Systems* with a design outdoor airflow less than 750 cfm.
4. *Spaces* where >75% of the *space* design outdoor airflow is required for *makeup air* that is exhausted from the *space* or *transfer air* that is required for *makeup air* that is exhausted from other *spaces*.
5. *Spaces* with one of the following occupancy categories as defined in ASHRAE Standard 62.1: correctional cells, daycare sickrooms, science labs, barbers, beauty and nail salons, and bowling alley seating.

Revise the standard as follows (SI units)

6.4.3.8 Ventilation Controls for High-Occupancy Areas

Demand control ventilation (DCV) is required for spaces larger than 50 m^2 and with a design occupancy for ventilation of ≥25 people per 100 m^2 of floor area and served by systems with one or more of the following:

a. Air-side economizer
b. Automatic modulating control of outdoor air damper
c. Design outdoor airflow greater than 400 L/s.

Exceptions to Section 6.4.3.8

1. Systems with the exhaust air energy recovery complying with <u>and where required by</u> Section 6.5.6.1
2. Multiple-zone systems without DDC of individual zones communicating with a central control panel
3. Systems with a design outdoor airflow less than 375 L/s
4. Spaces where >75% of the space design outdoor airflow is required for makeup air that is exhausted from the space or transfer air that is required for makeup air that is exhausted from other space(s)
5. Spaces with one of the following occupancy categories as defined in ASHRAE Standard 62.1: correctional cells, daycare sickrooms, science labs, barbers, beauty and nail salons, and bowling alley seating.

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

Public Review Draft

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

First Public Review (March 2017)
(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).

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FOREWORD

This addendum contains minor changes to language for clarification. Original language could be interpreted to allow room lighting and HVAC to resume after 30 minutes of unoccupied and unrented condition. Changes include:

- *The guest room temperature controls subsection is reorganized to clarify that there are three distinct modes of operation.*
- *The definition of networked guest room control system is modified to be consistent with the requirements.*
- *The time-out period for unoccupied indication is changed from 30 minutes to 20 minutes for consistency between HVAC and the lighting control of the main guest room space.*

The term "captive key card" is changed to "card key controls" in both the mechanical and lighting sections related to guest room controls. This is consistent with recent changes to the IECC. "Captive key card" is incorrect for hotel use as it refers to an industrial safety device. The hotel key is actually a switch and may utilize a relay, but does not have captive safety capability. Removing the key turns the lights or HVAC off. "Card key controls" was chosen as a general term that could cover either switches or relay activation devices.

Note: 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 k to 90.1-2016

Revise the standard as follows (IP and SI units)

Modify the following definition in Section 3.2

networked guest room control system: a *control system*, accessible from the hotel/motel front desk or other central location, that is capable of identifying ~~reserved~~ <u>rented and unrented</u> rooms according to a timed schedule, and is capable of controlling HVAC in each hotel/motel guest room separately.

Modify Secction 6.4.3.3.5 as follows:

6.4.3.3.5 Automatic Control of HVAC in Hotel/Motel Guest Rooms

Hotels and motels with greater than 50 guest rooms shall be provided with *automatic controls* for the HVAC *equipment* serving each guest room capable of and configured according to the requirements in the following subsection.

6.4.3.3.5.1 Guest Room HVAC Set-Point Control

HVAC *Systems* serving hotel guest rooms shall be capable of and configured with three modes of temperature *control*.

a. **Rented and unoccupied**. Within ~~30~~ 20 minutes of all occupants leaving the guest room, HVAC *set points* shall be automatically raised by at least 4°F (2°C) from the occupant *set point* in the cooling mode and automatically lowered by at least 4°F (2°C) from the occupant *set point* in the heating mode~~., When the guest room is u~~

b. **Unrented and unoccupied**. HVAC *set points* shall be automatically *reset* to 80°F (27°C) or higher in the cooling mode and to 60°F (16°C) or lower in the heating mode. The HVAC setpoints in the u~~U~~nrented and unoccupied guest room mode~~s~~ shall be ~~determined intiated~~initiated within 16 hours of the guest room being~~by either of the following: The guest room has been~~ continuously unoccupied~~ for up to 16 hours~~ or within 20 minutes of the guest room being continuously unoccupied where a *networked guest room control system* indicates the guest room is unrented, and

c. **Occupied.** HVAC set points shall return to their ~~occupired~~occupied *set points* once occupancy is sensed. ~~the guest room is unoccupied for no more than 30 minutes.~~

Exceptions to 6.4.3.3.5.1

1. A *networked guest room control system* shall be permitted to return the *thermostat set points* to their default occupied *set points* 60 minutes prior to the time the room is scheduled to be occupied.
2. Cooling for humidity *control* shall be permitted during rented and unoccupied or unrented and unoccupied periods.

6.4.3.3.5.2 Guest Room Ventilation Control

Within 20 ~~30~~ minutes of all occupants leaving the guest room, *ventilation* and exhaust fans shall automatically be turned off, or *isolation devices* serving each guest room shall automatically shut off the supply of *outdoor air* to the guest room and shut off exhaust air from the guest room.

Exception to 6.4.3.3.5.2

Guest room *ventilation systems* shall be permitted to have an *automatic* daily preoccupancy purge cycle that provides daily *outdoor air ventilation* during unrented periods at the design *ventilation* rate for 60 minutes or at a rate and duration equivalent to one air change.

6.4.3.3.5.3 Automatic Control

~~Captive~~ Card key ~~card systems~~ *controls* shall be permitted to be used to indicate occupancy ~~comply with Section 6.4.3.3.5~~.

9.4.1.3 Special Applications

a. The following lighting shall be separately controlled from the *general lighting* in all *spaces*:
   1. Display or accent lighting.
   2. Lighting in display cases.
   3. Nonvisual lighting, such as for plant growth or food warming.
   4. Lighting *equipment* that is for sale or used for demonstrations in lighting education.

b. Guestrooms

1. All lighting and all switched receptacles in guestrooms and suites in hotels, motels, boarding houses, or similar *buildings* shall be automatically controlled such that the power to the lighting and switched receptacles in each *enclosed space* will be turned off within 20 minutes after all occupants leave that *space*.

Exception to 9.4.1.3(b)(1)
Enclosed spaces where the lighting and switched receptacles are controlled by ~~captive~~ card key ~~card systems~~ *controls* and bathrooms are exempt.

2. Bathrooms shall have a separate *control device* installed to automatically turn off the bathroom lighting within 30 minutes after all occupants have left the bathroom.

Exception to 9.4.1.3(b)(2)
Night lighting of up to 5 W per bathroom is exempt.

c. All supplemental *task lighting*, including *permanently installed* undershelf or undercabinet lighting, shall be controlled from either (1) a *control device* integral to the *luminaires* or (2) by a *wall*-mounted *control device* that is *readily accessible* and located so that the occupant can see the controlled lighting.

HYDRAULIC INSTITUTE

Document Number:	BSR/HI 4.1 – 4.6-201x
Document Title:	*Sealless, Magnetically Driven Rotary Pumps for Nomenclature, Definitions, Application, Operation, and Test*
Date:	March 17, 2017
Sponsor and Publisher:	Hydraulic Institute
Contact:	Tori Serazi tserazi@pumps.org

Proposed edits based from ANSI Canvass Ballot

The committee leadership of HI 4.1 – 4.6 Sealless, Magnetically Driven Rotary Pumps for Nomenclature, Definitions, Application, Operation, and Test intended to re-ballot section 4.6.2 Torque confirmation test. The committee would like to move item a) Outlet Pressure at decoupling from section 4.6.2.4 Records to 4.6.2.7 Decoupling Torque (optional).

Content in red is being deleted, and content in blue is being added

As currently in ANSI Canvass draft:

4.6.2 Torque confirmation test (optional)

4.6.2.1 Objective

The object is to demonstrate the torque transmission capability of a synchronous magnetic coupling supplied as an integral portion of a rotary positive displacement pump.

4.6.2.2 Test scope

This test is designed to be conducted on assembled units in an operational mode. It is an optional test for units when a Type IV performance test has been conducted in accordance with ANSI/HI 3.6 *Rotary Pump Tests*. The method outlines procedures for establishing the magnetic coupling torque transmission capability.

When steady state decoupling torque is a goal, the suitability of this procedure is dependent on review by the manufacturer of the specific relationship between the available coupling torque and the rating of the pump. Sometimes the test may not be suitable because it would exceed the maximum pump or test stand operating capability. In such cases, the purchaser and manufacturer may agree on alternate test methods, including component testing or static unit tests. Such tests normally include use of torque test fixtures, and recommended procedures are contained in Magnet Material Producers Association publications.

4.6.2.3 Test parameters

Because this test follows a Type IV power test, the setup, instrumentation, circuits, and applicable procedures of ANSI/HI 3.6 *Rotary Pump Tests* apply.

4.6.2.4 Records

The following data shall be taken in addition to that listed in ANSI/HI 3.6 *Rotary Pump Tests*.

~~a) Outlet pressure at decoupling.~~

b) Recorded torque.

c) Calculated torque at maximum pressure achieved during test.

4.6.2.5 Calculations

The formula for calculating torque is:

(metric units) $\tau = \frac{9550 \times P}{n}$

Where:

τ = Torque, in newton-meters (N•m)

P = Power, in kilowatts (kW)

n = Pump speed, in revolutions per minute (rpm)

$$\tau = \frac{5250 \times P}{n}$$

(US customary units)

Where:

τ = Torque, in pound-feet (lb•ft)

P = Power, in horsepower (hp)

n = Pump speed, in revolutions per minute (rpm)

4.6.2.6 Test procedure

The pump with its magnetic coupling shall be installed in an approved circuit, and a Type IV performance test shall be conducted. Test shall be conducted to meet the criteria selected in Section 4.6.2.8.

4.6.2.7 Decoupling torque (optional)

Operation will then be established and circuit equilibrium achieved. The control valve located in the discharge line shall be closed gradually until the discharge pressure is within 5% of the calculated pressure necessary to meet the selected test criteria (see Section 4.6.2.8). Using the discharge control valve, pressure will then be increased in increments of 1% until the criteria is satisfied.

If testing for the decoupling torque (maximum torque capability), then that capability will be assigned as 101% of the last recorded torque value or the calculated torque value derived from the measurement of power.

4.6.2.8 Acceptance criteria

Acceptance is a function of contractual criteria and is foreseen as being established as confirming that there is available torque that:

a) Meets or exceeds a published level.

b) Meets or exceeds a specified level.

c) Tests maximum torque capability of the drive.

d) Is a combination of the above.

Alternate acceptance criteria may correspondingly adjust test procedures.

As proposed in ANSI Canvass:

4.6.2 Torque confirmation test (optional)

4.6.2.1 Objective

The object is to demonstrate the torque transmission capability of a synchronous magnetic coupling supplied as an integral portion of a rotary positive displacement pump.

4.6.2.2 Test scope

This test is designed to be conducted on assembled units in an operational mode. It is an optional test for units when a Type IV performance test has been conducted in accordance with ANSI/HI 3.6 *Rotary Pump Tests*. The method outlines procedures for establishing the magnetic coupling torque transmission capability.

When steady state decoupling torque is a goal, the suitability of this procedure is dependent on review by the manufacturer of the specific relationship between the available coupling torque and the rating of the pump. Sometimes the test may not be suitable because it would exceed the maximum pump or test stand operating capability. In such cases, the purchaser and manufacturer may agree on alternate test methods, including component testing or static unit tests. Such tests normally include use of torque test fixtures, and recommended procedures are contained in Magnet Material Producers Association publications.

4.6.2.3 Test parameters

Because this test follows a Type IV power test, the setup, instrumentation, circuits, and applicable procedures of ANSI/HI 3.6 *Rotary Pump Tests* apply.

4.6.2.4 Records

The following data shall be taken in addition to that listed in ANSI/HI 3.6 *Rotary Pump Tests*.

a) Recorded torque.

b) Calculated torque at maximum pressure achieved during test.

4.6.2.5 Calculations

The formula for calculating torque is:

(metric units) $$\tau = \frac{9550 \times P}{n}$$

Where:

τ = Torque, in newton-meters (N•m)

P = Power, in kilowatts (kW)

n = Pump speed, in revolutions per minute (rpm)

$$\tau = \frac{5250 \times P}{n}$$

Where:

τ = Torque, in pound-feet (lb•ft)

P = Power, in horsepower (hp)

n = Pump speed, in revolutions per minute (rpm)

4.6.2.6 Test procedure

The pump with its magnetic coupling shall be installed in an approved circuit, and a Type IV performance test shall be conducted. Test shall be conducted to meet the criteria selected in Section 4.6.2.8.

4.6.2.7 Decoupling torque (optional)

The following data shall be taken in addition to that listed in ANSI/HI 3.6 *Rotary Pump Tests*.

a) Outlet pressure at decoupling.

Operation will then be established and circuit equilibrium achieved. The control valve located in the discharge line shall be closed gradually until the discharge pressure is within 5% of the calculated pressure necessary to meet the selected test criteria (see Section 4.6.2.8). Using the discharge control valve, pressure will then be increased in increments of 1% until the criteria is satisfied.

If testing for the decoupling torque (maximum torque capability), then that capability will be assigned as 101% of the last recorded torque value or the calculated torque value derived from the measurement of power.

4.6.2.8 Acceptance criteria

Acceptance is a function of contractual criteria and is foreseen as being established as confirming that there is available torque that:

a) Meets or exceeds a published level.

b) Meets or exceeds a specified level.

c) Tests maximum torque capability of the drive.

d) Is a combination of the above

HYDRAULIC INSTITUTE

Document Number:	BSR/HI 11.6-201x
Document Title:	*Rotodynamic Submersible Pumps for Hydraulic Performance, Hydrostatic Pressure, Mechanical, and Electrical Acceptance Tests*
Date:	March 17, 2017
Sponsor and Publisher:	Hydraulic Institute
Contact:	Tori Serazi tserazi@pumps.org

Proposed edits based from ANSI Canvass Ballot

As currently in ANSI Canvass draft:

11.6.1.2 Scope

a) Submersible pump designs included are:
- 1) Semipermanent/pull-up/wet-pit types.
- 2) Dry-pit/dry-installed types.
- 3) Portable/flexible outlet types.
- 4) Chopper/cutter/grinder types.
- 5) Close-coupled types.
- 6) Integral electric motor types.
- 7) Direct current or battery-powered motors
- 1) Fractional horsepower (hp)

b) The following pump types are excluded:
- 1) Nonrotodynamic (positive displacement [PD] and progressive cavity [PC] types)
- 2) Lineshaft.
- 3) Mixers and agitators.
- 4) Deep-well pumps/bore-hole pumps.
- 5) Pumps not powered by an electric motor.

As proposed in ANSI Canvass comment:

11.6.1.2 Scope

a) Submersible pump designs included are:
- 1) Semipermanent/pull-up/wet-pit types.
- 2) Dry-pit/dry-installed types.
- 3) Portable/flexible discharge types.
- 4) Chopper/cutter/grinder types.
- 5) Close-coupled types.
- 6) Integral electric motor types.

b) The following pump types are excluded:
- 1) Direct current or battery-powered motors
- 2) Fractional horsepower (hp).
- 3) Nonrotodynamic (positive displacement [PD] and progressive cavity [PC] types).
- 4) Lineshaft.
- 5) Mixers and agitators.
- 6) Deep-well pumps/bore-hole pumps.
- 7) Pumps not powered by an electric motor.

Proposed edits based from ANSI Canvass Ballot

The committee leadership of HI 11.6 Rotodynamic Submersible Pumps for Hydraulic Performance, Hydrostatic Pressure, Mechanical, and Electrical Acceptance Tests intended to ballot the 1U tolerance for the municipal markets to be in alignment with ANSI/HI 14.6-2016 Rotodynamic Pumps for Hydraulic Performance Acceptance Tests; however, the change was not reflected in the initial ANSI ballot draft. The HI standards committee has reviewed this and recommended re-balloting with the 1U tolerance to maintain consistency between the two American National Standards.

Table 11.6.5.4.3 — Default acceptance grade

As currently in ANSI Canvass draft:

Table 11.6.5.4.3 — Default acceptance grade

Application	Driver rated power	
	>10 to 100 kW (13 to 134 hp)	>100 kW (>134 hp)
Municipal Water	2B	1B
Municipal Wastewater	2B	1B
Electric Power Industry	1B	1B
Cooling Tower	2B	2B
Portable Dewatering	3B	3B
Irrigation	3B	2B
Stormwater	2B	2B
All Other Applications Not Listed	3B	2B

NOTE: This table only applies to situations where the purchaser and manufacturer have agreed to a guarantee point, but no test acceptance grade has been specified.

Other specified duty points, including their tolerances, shall be per separate agreement between the manufacturer and purchaser. If other specified duty points are agreed on, but no tolerance is given for these points, then the default acceptance grade for these points shall be grade 3B.

As proposed in ANSI Canvass comment:

Table 11.6.5.4.3 — Default acceptance grade

Application	Driver rated power	
	>10 to 100 kW (13 to 134 hp)	>100 kW (>134 hp)
Municipal Water	1U	1U
Municipal Wastewater	1U	1U
Electric Power Industry	1B	1B
Cooling Tower	2B	2B
Portable Dewatering	3B	3B
Irrigation	3B	2B
Stormwater	2B	2B
All Other Applications Not Listed	3B	2B

NOTE: This table only applies to situations where the purchaser and manufacturer have agreed to a guarantee point, but no test acceptance grade has been specified.

Other specified duty points, including their tolerances, shall be per separate agreement between the manufacturer and purchaser. If other specified duty points are agreed on, but no tolerance is given for these points, then the default acceptance grade for these points shall be grade 3B.

BSR/UL 746C, Standard for Polymeric Materials – Use in Electrical Equipment Evaluations

PROPOSAL

1. **Considerations for Parts Made by Additive Manufacturing Technology**

1.4 Unless otherwise indicated, parts made by Additive-Manufacturing (AM) Technology shall be evaluated by subjecting the end-product part or test specimens cut from the end-product part to the specified test. For preselection purposes, test specimens printed in the specified dimensions or cut to the specified dimensions from a printed part may represent the end product when the same production conditions are used.

BSR/UL 746E, Standard for Safety for Polymeric Materials – Industrial Laminates, Filament Wound Tubing, Vulcanized Fibre, and Materials Used in Printed Wiring Boards

3. Split ANSI Grade CEM-3 into Grades CEM-3.0 and CEM-3.1

Table 8.2

Abbreviated industrial laminate program requirements

	Acceptable values					
	Minimum flexural strength MPa (psi)		Ash content range (% by weight)		UL 94 Flammability Class	
	Thickness		Thickness		Thickness	
UL/ANSI Grade	0.8 mm (0.031 inch)	1.6 mm (0.062 inch)	0.8 mm (0.031 inch)	1.6 mm (0.062 inch)	0.8 mm (0.031 inch)	1.6 mm (0.062 inch)
X	151.7 (22,000)	172.4 (25,000)	-	-	HB	HB
XP	82.7 (12,000)	89.6 (13,000)	-	-	HB	HB
XPC	-	68.9 (10,000)	-	-	HB	HB
XX	103.4 (15,000)	103.4 (15,000)	-	-	HB	HB
XXP	96.5 (14,000)	96.5 (14,000)	-	-	HB	HB
XXX	93.1 (13,500)	93.1 (13,500)	-	-	HB	HB
XXXP, XXXPC	82.7 (12,000)	82.7 (12,000)	-	-	HB	HB
C	117.2 (17,000)	117.2 (17,000)	-	-	HB	HB
CE, L	113.8 (16,500)	113.8 (16,500)	-	-	HB	HB
LE	110.3 (16,000)	110.3 (16,000)	-	-	HB	HB

G-3	124.1 (18,000)	137.9 (20,000)	57.7 - 67.2	57.7 - 67.2	HB	HB
G-5	379.1 (55,000)	344.7 (50,000)	55.0 - 63.3	55.0 - 63.3	V-0	V-0
G-7	68.9 (10,000)	137.9 (20,000)	85.3 - 91.6	85.3 - 91.6	V-0	V-0
G-9	-	413.7 (60,000)	55.0 - 63.3	55.0 - 63.3	V-0	V-0
G-10	413.7 (60,000)	413.7 (60,000)	55.0 - 67.7	55.0 - 67.7	HB	HB
G-11	413.7 (60,000)	413.7 (60,000)	60.5 - 70.0	60.5 - 70.0	HB	HB
FR-1	-	68.9 (10,000)	-	-	V-0 or V-1	V-0 or V-1
FR-2	82.7 (12,000)	82.7 (12,000)	-	-	V-0 or V-1	V-0 or V-1
FR-3	137.9 (20,000)	137.9 (20,000)	-	-	V-0 or V-1	V-0 or V-1
FR-4.0	413.7 (60,000)	413.7 (60,000)	55.0 - 67.7	55.0 - 67.7	V-0	V-0
~~FR-4.1~~	~~413.7 (60,000)~~	~~413.7 (60,000)~~	~~55.0 - 67.7~~	~~55.0 - 67.7~~	~~V-0~~	~~V-0~~
FR-5	413.7 (60,000)	413.7 (60,000)	60.5 - 70.0	60.5 - 70.0	V-0 or V-1	V-0 or V-1
CEM-1	344.7 (50,000)	275.6 (35,000)	32.6 - 39.8	16.4 - 23.3	V-0	V-0
CEM-3.0	344.7 (50,000)	275.6 (35,000)	42.7 - 68.3	29.7 - 44.9	V-0	V-0
~~CEM-3.1~~	~~344.7 (50,000)~~	~~275.6 (35,000)~~	~~42.7 - 68.3~~	~~29.7 - 44.9~~	~~V-0~~	~~V-0~~
GPO-2	-	124.1 (18,000)	44.6 - 60.2	44.6 - 60.2	-	V-0

GPO-3	-	124.1 (18,000)	47.8 - 57.2	47.8 - 57.2	-	V-0
GPY	448.2 (65,500)	368.9 (53,500)	58.5 - 71.5	58.5 - 71.5	HB, V-0, or V-1	HB, V-0, or V-1

5. Expansion of the Ash Content Range for Types FR-4.0 and FR-4.1 in Table 8.2

Table 8.2

Abbreviated industrial laminate program requirements

	Acceptable values					
	Minimum flexural strength MPa (psi)		**Ash content range (% by weight)**		**UL 94 Flammability Class**	
	Thickness		**Thickness**		**Thickness**	
UL/ANSI Grade	**0.8 mm (0.031 inch)**	**1.6 mm (0.062 inch)**	**0.8 mm (0.031 inch)**	**1.6 mm (0.062 inch)**	**0.8 mm (0.031 inch)**	**1.6 mm (0.062 inch)**
X	151.7 (22,000)	172.4 (25,000)	-	-	HB	HB
XP	82.7 (12,000)	89.6 (13,000)	-	-	HB	HB
XPC	-	68.9 (10,000)	-	-	HB	HB
XX	103.4 (15,000)	103.4 (15,000)	-	-	HB	HB
XXP	96.5 (14,000)	96.5 (14,000)	-	-	HB	HB
XXX	93.1 (13,500)	93.1 (13,500)	-	-	HB	HB
XXXP, XXXPC	82.7 (12,000)	82.7 (12,000)	-	-	HB	HB
C	117.2 (17,000)	117.2 (17,000)	-	-	HB	HB
CE, L	113.8 (16,500)	113.8 (16,500)	-	-	HB	HB

LE	110.3 (16,000)	110.3 (16,000)	-	-	HB	HB
G-3	124.1 (18,000)	137.9 (20,000)	57.7 - 67.2	57.7 - 67.2	HB	HB
G-5	379.1 (55,000)	344.7 (50,000)	55.0 - 63.3	55.0 - 63.3	V-0	V-0
G-7	68.9 (10,000)	137.9 (20,000)	85.3 - 91.6	85.3 - 91.6	V-0	V-0
G-9	-	413.7 (60,000)	55.0 - 63.3	55.0 - 63.3	V-0	V-0
G-10	413.7 (60,000)	413.7 (60,000)	55.0 - 67.7	55.0 - 67.7	HB	HB
G-11	413.7 (60,000)	413.7 (60,000)	60.5 - 70.0	60.5 - 70.0	HB	HB
FR-1	-	68.9 (10,000)	-	-	V-0 or V-1	V-0 or V-1
FR-2	82.7 (12,000)	82.7 (12,000)	-	-	V-0 or V-1	V-0 or V-1
FR-3	137.9 (20,000)	137.9 (20,000)	-	-	V-0 or V-1	V-0 or V-1
FR-4.0	413.7 (60,000)	413.7 (60,000)	55.0 - 78.0	55.0 - 78.0	V-0	V-0
~~FR-4.1~~	~~413.7 (60,000)~~	~~413.7 (60,000)~~	~~55.0 - 78.0~~	~~55.0 - 78.0~~	~~V-0~~	~~V-0~~
FR-5	413.7 (60,000)	413.7 (60,000)	60.5 - 70.0	60.5 - 70.0	V-0 or V-1	V-0 or V-1
CEM-1	344.7 (50,000)	275.6 (35,000)	32.6 - 39.8	16.4 - 23.3	V-0	V-0
CEM-3.0	344.7 (50,000)	275.6 (35,000)	42.7 - 68.3	29.7 - 44.9	V-0	V-0
GPO-2	-	124.1 (18,000)	44.6 - 60.2	44.6 - 60.2	-	V-0

GPO-3	-	124.1 (18,000)	47.8 - 57.2	47.8 - 57.2	-	V-0
GPY	448.2 (65,500)	368.9 (53,500)	58.5 - 71.5	58.5 - 71.5	HB, V-0, or V-1	HB, V-0, or V-1

BSR/UL 817, Standard for Safety for Cord Sets and Power-Supply Cords

1. Addition of Requirements for an Outdoor Power Supply Cord Employing SPT-2W and SPT-2RW Cord for Use in Products Covered by the Standard for Seasonal and Holiday Decorative Products, UL 588

PROPOSAL

10.1.1.6 In addition to the cord types specified in Table 10.1, SPT-2W and SPT-2-RW may also be employed in power-supply cords as noted in the Standard for Electric Fans, UL 507 and in the Standard for Seasonal and Holiday Decorative Products, UL 588.

2. Adding Requirements to Allow an Optional "HF" Rating on a Cord Set or Power Supply Cord as New 6.2A

PROPOSAL

6.2A Combustible materials

6.2A.1 If a device employs flexible cord or the equivalent that is marked “HF″ on the body of the cord, and where all individual combustible materials used in the construction of the device (e.g., inner mold/enclosure, outer mold/enclosure, etc.) are determined to be halogen free in accordance with the Outline of Investigation for Acid Gas, Acidity and Conductivity of Combusted Materials and Assessment of Halogens, UL 2885, the device may be surface marked on the plug and/or cord connector with the suffix ″HF″ after the catalog number.

3. Adding the Use of the 1000 Hour Xenon-Arc Apparatus as an Alternate to the Carbon-Arc Apparatus, Revised SB16.1, SB16.2, and New SB16.5

PROPOSAL

SB16 Exposure to Ultraviolet and Water Test

SB16.1 Compliance with the moisture and sunlight-resistance requirement in SB4.1 shall be demonstrated by the absence of any permanent damage, such as distortion of the boot or fitting, or cracking or splitting of the nonmetallic material, following the exposure to ultraviolet light and water spray, and subsequent impact, described in SB16.2 – SB16.5 ~~SB16.4~~.

SB16.2 Each of three representative devices of a nonmetallic boot, ring, or cover with its associated plug or connector shall be exposed for 720 h to ultraviolet light and water spray as described in SB16.4 or shall be exposed to 1000 h xenon-arc ultraviolet light and water spray as described in SB16.5. At the end of 720 h carbon-arc conditioning, or the 1000 h xenon-arc conditioning, each representative device shall be connected to a mating device mounted to a fixed vertical wall and then subjected to a single 6.8 N·m (5 lb/ft) impact.

SB16.5 The test, Xenon-arc, Type B, shall be in accordance with the Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials, ASTM G155. The

Exposure Test Method, consisting of continuous exposure to light and intermittent exposure to water spray, with a programmed cycle of 120 minutes consisting of a 102 minute light exposure and an 18 minute exposure to water spray with light, is to be used.

4. Adding Requirements to Allow Up to Six Outlets on a Single Cord Connector Body, Revised 8.5.2, 10.7.2.1.7, and 10.7.2.1.9

PROPOSAL

8.5.2 A cord connector shall have a maximum of three outlets. The configuration of the cord connector shall be the same as the attachment plug.

Exception: A cord connector body may have a maximum of six outlets when in accordance with Exceptions 1 – 3 of 10.7.2.1.7.

10.7.2.1.7 The outdoor use cord connector may have a maximum of three ~~3~~ outlets. The configuration of the contact members shall be the same for the cord connector as the attachment plug.

Exception No. 1: Up to six outlets may be provided in an outdoor-use extension cord set employing 12 AWG, Type SJ or equivalent flexible cord that is constructed in accordance with 10.7.2.2A.6 and marked in accordance with 21.3.5.

Exception No. 2: Up to six in-line outlets, including the end fitting, may be provided in an outdoor-use extension cord set employing 12 AWG, Type SJ or equivalent flexible cord and marked in accordance with 21.3.5.

Exception No. 3: Up to six outlets on a single cord connector body may be provided in an outdoor-use extension cord set employing 12 AWG, Type SJ or equivalent flexible cord and marked in accordance with 21.3.5. The total number of outlets on an extension cord set shall not exceed six.

10.7.2.1.9 Cord connectors shall not have more than three outlets and shall be of the same configuration as the plug.

Exception: A cord connector body may have a maximum of six outlets when in accordance with Exceptions 1 – 3 of 10.7.2.1.7.

BSR/UL 1191, Standard for Safety for Components for Personal Flotation Devices

1. Automatic Inflation Systems Inadvertent Puncture requirement

PROPOSAL

Note: Only the new and revised portions of Tables 32.1 and 32.4 are in the ballot document. To see the complete tables, please refer to the UL 1191 Preliminary Review Work Area dated March 3, 2017.

Table 32.1

Automatic inflation systems

Tests	Exposure[a]	Test method	Number of samples[b,c]	Use Codes	Compliance criteria
Inadvertent Puncture[h]	SC	32.14	1	1F, 2F, 3F, 5H, and 6F	The cylinder shall not be punctured.
[a] See Table 2.2 for conditioning details.					
[b] Color dependent. See 2.4.					
[c] For polymeric/metallic inflation systems, a minimum of 185 samples with water sensing elements plus 300 extra water sensing elements, plus 300 cylinders, 110 proof discs and holders, 4 manifolds welded to 5 inch by 5 inch (100 mm by 100 mm) inflation chamber material.					
[d] The duration specified is for the first trial. Each sample shall be conditioned for an additional 4 hours prior to each subsequent trial.					
[e] After the last submergence period, the sample is to be removed from the liquid and the excess liquid allowed to run off for 5 minutes.					
[f] Each sample is to be placed in a circulating-air oven maintained at 70 ±2°C (158 ±4°F) for 24 hours. The samples are then to be placed in a cold chamber at minus 30 ±2°C (minus 22 ±4°F) for 24 hours. The temperature of th e cold chamber is then to be raised to 0 ±2°C (32 ±4°F) for 24 hours.					
[g] Each sample is to be placed in a cold chamber at minus 30 ±2°C (minus 22 ±4°F) for 24 hours. The samples are then to be placed in a circulating-air oven maintained at 70 ±2°C (158 ±4°F) for 24 hours.					
[h] Only conducted when an inflation system relies on the insertion of a CO_2 cylinder to reposition the activation mechanism (ie. pierce pin).					

Table 32.4

Manual inflation systems

Tests	Exposure[a]	Test	Number of	Use	Compliance

		method	samples[b,c]	Codes	criteria
Inadvertent Puncture[e]	SC	32.14	1	1F, 2F, 3F, 5H, and 6F	The cylinder shall not be punctured.

[a] See Table 2.2 for conditioning details.

[b] Color dependent. See 2.4.

[c] For polymeric/metallic inflation systems, a minimum of 40 samples, and 200 cylinders, and 4 manifolds welded to 5 inch by 5 inch (100 mm by 100 mm) inflation chamber material.

[d] The duration specified is for the first trail. Each sample shall be conditioned for an additional 4 hours prior to each subsequent trail.

[e] Only conducted when an inflation system relies on the insertion of a CO_2 cylinder to reposition the activation mechanism (ie. pierce pin).

32.14 Inadvertent Puncture Test

32.14.1 The following test is to be conducted when an inflation system relies on the insertion of a CO2 cylinder to reposition the activation mechanism (ie. pierce pin).

32.14.2 This test is to determine if repeated insertion and removal of the same cylinder will damage the CO_2 cylinder such that it is punctured.

32.14.3 One CO_2 cylinder shall be used for this test.

32.14.4 A CO_2 cylinder, as defined by the manufacturer, shall be completely installed. The cylinder shall then be completely removed. This cycle shall then be repeated 19 times.

32.14.5 At the completion of the 20 cycles, the CO_2 cylinder shall not be punctured such that the CO_2 gas is released.