2023 AHRI Standards Style Guide

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This *AHRI Standards Style Guide* document is owned and maintained by the AHRI Standards Committee, a standing committee of the AHRI Board of Directors. This document defines the policies and procedures related to development and approval of AHRI standards and guidelines.

Copies of this document shall be provided freely to interested parties.

Figures and examples in this document are informative, unless otherwise noted.

Note:

This style guide supersedes the 2022 version of the *AHRI Standards Style Guide*.

Intent

This style guide is intended for the guidance of the AHRI committees and staff in the development of standards and guidelines.

Review and Amendment

This style guide is subject to review and amendment.

2023 Edition

This edition of *AHRI Standards Style Guide* was prepared by the Ad Hoc Standards Style Guide Committee. It was approved by the Standards Committee on 12 December 2023.

Origin and Development of the AHRI Standards Style Guide

In 2021 the Standards Committee approved the *AHRI Policy & Procedures for the Development of Standards*. This separated the style guide from the policy and procedure document and required style updates to align with the new version.

In 2022 and 2023 the Standards Team received feedback from AHRI members and staff and used this to make updates and provide clarification.

Summary of Changes

The *AHRI Standards Style Guide* contains the following changes, additions, and updates to *AHRI Standards Style Guide 2022*:

- Added new cover pages (see Section 3.4.1) with the American National Standards Institute (ANSI) and Standards Council of Canada (SCC) logos as approved by ANSI and SCC and examples in Appendix A.
- Added information for stand-alone appendices (SAA) throughout the style guide. See new Table 3, "Overview of the Major Sections and Arrangement for Stand-alone Appendices (SAA)," and revised Section 3.6.
- Changed requirement ("shall") to recommendation ("should") in the following statement in Section 1.8:
    - "If a requirement appears in another AHRI standard or elsewhere, the requirement should be invoked by reference, not by repetition."
- Added requirement to include international classification for standards (ICS) code in front matter above supersedure note, see Section 3.4.6, Table 1, Table 2, and Table 3.
- Added a statement clarifying that standards, guidelines and stand-alone appendices do not include *provisions* or normative references to AHRI Certification Programs in Section 3.4.
- Added rules for the use of the ANSI logo regarding translations in Section 3.4.2 and Section 3.4.3.
- Added images of National Standard of Canada (NSC) bilingual logos, see Figure 4 and Figure 5.
- Clarified that the summary of changes is for substantive changes and a foreword, if included, is part of the summary of changes. See Section 3.4.13.
- Revised layout of the committee membership tables to sort by company or organization and removed requirement to include interest category and location unless the standard is approved as an NSC. See Section 3.4.14.
- Added examples of page headers for reaffirmations, addenda or errata, and stand-alone regional appendices in Section 3.4.19.
- Added rules for including and formatting synonyms in definitions in Section 3.5.3.
- Modified Section 3.5.3.1 as follows:
    - Updated the introduction sentence for Section 3, "Definitions," to remove "shall" so that the same sentence can be used in standards, guidelines, and stand-alone appendices.
    - Added the option to include other organization definitions, such as ASA, in the opening statement.
    - Provided rules and guidance for stand-alone appendices that have the option to include appendix-specific definitions.
    - Removed repetitive text "a barometric pressure of" from the definitions for "standard air".
- Updated Section 3.5.6, Section 3.5.7, and Section 3.5.10, to include language to be used if a standard does not address these requirements.

- Changed the required wording ("shall") to recommended wording ("should") for "Minimum Data Requirements for Published Ratings" in Section 3.5.7.
- Updated the text for references in Appendix A and Appendix B in Section 3.6.1 and Section 3.6.2.
- Added Section 3.6.5, "Placeholder Appendix Page."
- Added Section 4.4, "Numeral Versus Words," to be in accordance with the 17th edition of the *Chicago Manual of Style (CMOS)* and to clarify when to spell out or use numerals.
- Added Section 4.6, "Acronyms and Uncommon Abbreviations," to provide rules for acronyms and uncommon abbreviations for terms used that are not defined in Section 3 Definitions.
- Added formatting rules for the degree symbol used with Celsius and Fahrenheit, and formatting kelvin without a degree symbol and space between the number and unit. See Section 4.7.
- Added a column for SI descriptions to Table 5.
- Updated Section 4.10 and content to clarify *normative* and *informative elements* in documents.
- Added three new words to Table 7:
    - adequate(ly)
    - numerous
    - various
- Added rules to clarify that titles for sections, subsections, figures, and tables are descriptive, shall not contain requirements, and should not be longer than one line in Section 5.1, Section 5.3.4, and Section 5.4.1.
- Added requirement that references in text should appear above figures, tables, and equations in Section 5.3, Section 5.4, and Section 5.5.
- Added permission to use alternate shading in table rows for readability in Section 5.4.
- Changed requirement ("shall") for including a zero to align numbers with decimal points in numerical columns in Section 5.4.7 to a recommendation ("should") in case this interferes with requirements for significant figures.
- Added rule for sequence of table notes in Section 5.4.10.
- Added rule to obtain permission for use of copyrighted material for each edition in Section 5.8 and Section 6.2.
- Updated formatting rules for referencing sources that have been reaffirmed or have addenda or errata, including examples in Section 5.8.3.
- Removed reference to ANSI Y10, *American National Standards Institute Series on Letter Symbols*, in Section 5.9 because this document is not available.
- Updated Section 7.1.3 to provide guidance on the order SI and I-P units should appear in joint documents.
- Updated Section 7.2 to provide clarification on substitutions and conversions.
- Updated Appendix A to include examples of new cover pages.
- Updated Appendix B to include examples of front matter.
- Updated Appendix C to include more examples of reference lists.
- Added Appendix D, "Examples of Placeholder Pages in Appendices."
- Moved examples for Addenda and Errata cover page and front matter to a new Appendix E.
- Added Appendix F, "AHRI Policy on Units of Measurement in AHRI Standards (2009)," for reference.

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AHRI Standards Committee	
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These lists represent the membership of the Ad Hoc Standards Style Guide Committee and the Standards Committee at the time the Standards Committee approved the final text of this edition. Since that time, changes in the membership may have occurred. Membership on these committees shall not in and of itself constitute an endorsement by the committee members, employers of AHRI, or any document developed by the committee on which the member serves.

Note: The *AHRI Standards Style Guide* was developed internally. The Ad Hoc Standards Style Guide Committee updated the 2022 *AHRI Standards Style Guide* but did not vote to approve the 2023 edition.

AHRI Ad Hoc Standards Style Guide Committee Scope: The scope of the AHRI Ad Hoc Standards Style Guide Committee was to update the existing format and content requirements in the 2022 edition of the *AHRI Standards Style Guide*.

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AHRI STANDARDS STYLE GUIDE

Section 1. Objectives of AHRI Standards Style Guide and Principles for Development of Standards and Guidelines

1.1 Objective of the AHRI Standards Style Guide

The *AHRI Standards Style Guide* is a manual that provides formatting rules, defines the elements of documents, defines normative and informative language, provides rules for normative and informative sections of documents, specifies editorial style, and is an example of formatting elements of a document.

The objectives of the *AHRI Standards Style Guide* include:

- to provide an all-purpose guide as a resource for AHRI staff and committees for the development of AHRI standards and guidelines
- to provide answers to writing, style, and formatting questions
- to maintain consistency and quality of AHRI standards and guidelines

1.2 How the Guide is Arranged

The Standards Style Guide is divided into eight sections:

- Objectives of *AHRI Standards Style Guide* and Principles for Development of Standards and Guidelines (Section 1)
- Definitions (Section 2)
- Document Structure (Section 3)
- Editorial Style (Section 4)
- Document Elements (Section 5)
- Copyright and Permissions (Section 6)
- Units of Measure in AHRI Standards and Guidelines (Section 7)
- Interpretations Format and Numbering (Section 8)
- Examples in Appendix A through Appendix D
- Copy of the AHRI Policy on Units of Measurements in AHRI Standards (2009) for reference in Appendix F

1.3 Objective of Standards

This *AHRI Standards Style Guide* defines the rules for structure, format, and content of AHRI standards and guidelines. Standards and guidelines are defined in the latest edition of the *AHRI Policy & Procedures for the Development of Standards*.

The objective of AHRI standards and guidelines is to specify clear and unambiguous *provisions* to promote international trade and communication. To achieve this objective, standards and guidelines documents shall:

- Be complete within the limits specified by their scope. When a standard or guideline provides requirements or *recommendations*, these are either written explicitly, or made by reference to other documents.
- Be internally consistent within each document.
- Be clear and accurate to prevent misinterpretation or misunderstanding to a person having competence in the field.
- Be comprehensible to qualified people who have not participated in their preparation.
- Be concise, not using more words than necessary to convey the idea.
- Be written using existing knowledge about the *state of the art* and reflect current accepted or best practices.

- Take into account the current market conditions; acknowledging the tradeoffs between what is technically feasible and what the market demands; and provide a framework for future technological development.
- Conform to the *AHRI Policy & Procedures for the Development of Standards* and this *AHRI Standards Style Guide.*

AHRI standards and guidelines are voluntary; a standard does not by itself impose any obligation upon anyone to follow the standard. However, an obligation can be imposed, for example, by adoption of the standard into regulation or legislation or by a contract that refers to the standard. An AHRI standard or guideline shall not include contractual requirements (for example, concerning claims, guarantees, covering of expenses) and legal or statutory requirements.

1.4 Development and Approval

The procedure for the development and approval of standards and guidelines is given in the *AHRI Policy & Procedures for the Development of Standards*. This procedure shall be applied throughout all stages of drafting.

1.5 Performance Principle

Not all characteristics of an item or a subject can be, or need be, standardized. The choice of characteristics to be standardized depends on the purpose of the document (for example, product standard, application standard, or guideline). A functional analysis of the product can help to identify the characteristics to be included in the document.

Requirements shall be expressed in terms of performance rather than design or descriptive characteristics. This principle allows maximum freedom for technical development and reduces the risk of unfavorable market impacts (for example, limiting development of innovative solutions).

When the performance principle is adopted, important features shall not be inadvertently omitted from the performance *requirements*.

Requirements concerning the manufacturing process shall be omitted in favor of tests to be made on the final product.

The choice between specifying by description or by performance is important because specification by performance can lead to complicated, costly, and lengthy testing procedures.

1.6 Verifiability

Requirements shall be objectively verifiable. Only those *requirements* that can be verified shall be included.

Subjective phrases such as “sufficiently strong” or “of adequate strength” shall not be used.

The stability, reliability or lifetime of a product shall not be specified if there is not a test method known that can verify the claim in a specified time. A guarantee by the manufacturer is not a substitute for such *requirements*. Guaranteed conditions shall not be included because these are commercial or contractual, rather than technical, in nature.

1.7 Consistency

Consistency should be maintained within each document, and within a series of associated documents, as follows:

- The structure of associated documents and the numbering of their clauses should be identical.
- Identical wording should be used to express identical *provisions*.
- The same terminology should be used throughout. Synonyms shall not be used in the document to replace a defined term.

Consistency is particularly important to help the user understand documents or series of associated documents, and when using automated text processing techniques and computer-aided translation.

1.8 Prevention of Duplication and Unnecessary Deviations

Standards, guidelines, and stand-alone appendices (SAA) should abstain from duplication with other AHRI standards and guidelines, or those from other organizations. This is particularly important in test methods that are often applicable to more than one product or type of product.

Before developing a standard on any item or subject, the developing committee shall determine whether an applicable standard already exists either at AHRI or elsewhere. If a *requirement* appears in another AHRI standard or elsewhere, the *requirement* should be invoked by reference, not by repetition.

If a test method is, or can be, applicable to two or more types of products, a document shall be prepared on the method itself, and each document dealing with a given product shall refer to this separate document, indicating any modifications that can be necessary. This will help to prevent unnecessary deviations.

The *requirements* for one item or subject should be confined to one document.

The document should be written in a manner specifying generic *requirements* applicable to a group of items or subjects.

If a standards technical committee (STC)determines that the repetition of a *requirement* from an exterior source is necessary, the source shall be referenced precisely (see Section 5.8).

1.9 Accommodation of More Than One Product Size

When developing a document's scope, test *requirements*, and rating *requirements*, attention shall be given to all product sizes, variations, and configurations as technically feasible for the given product. Attention shall be given to the global market for the product and the expertise of the STC.

1.10 Characteristics Not Specified in a Document

A standard or guideline may list characteristics that can be chosen freely by the supplier. The characteristics chosen shall be stated, for example, on a nameplate, label or accompanying document.

For complex items, specifying exhaustive performance *requirements* is impractical. Instead, require that the item be supplied with a list of performance data.

Documents listing characteristics for which suppliers or purchasers are required to state values or other data not specified by the document shall specify how such values are to be measured and stated.

1.11 Translatability

AHRI standards and guides will be translated and published in a local language. There is a requirement to translate into French those standards intended for Canadian (SCC) approval. AHRI promotes the adoption of AHRI standards in other countries and regions, so other standards may need to be translated into other languages as well. Even for standards that will not be translated the document should be written in manner that allows for translation as these same guidelines will help make standards more readable, especially for those readers whose native language may not be American English.

Committees developing standards can make the document more translatable by:

- Not using colloquialisms or slang.
- Using correct English.
- Using terminology consistently, such as always using a word or product name in the same manner, and not using synonyms for second uses.
- Using words for *requirements* and *recommendations* (for example, "shall" instead of "must" and "should" instead of "may", respectively) correctly and consistently.
- Use concise and clear language and terminology.
- Not using terms that are country, region, or hemisphere specific, or words or examples that are culture specific.
- Not using subjective and unclear terms and phrases such as those found in the prohibited words list in Table 7.

Section 2. Definitions

2.1 Conditions of a Document

2.1.1 Capability

An expression, in the content of a document, that conveys the ability, fitness, or quality necessary to do or achieve a specified thing.

2.1.2 External Constraint

A constraint or obligation on the user of the document (for example, laws of nature or conditions existing in different countries or regions) that is not stated as a *provision* of the document.

2.1.3 Permission

An expression, in the content of a document, that conveys consent or liberty (or opportunity) to do something.

2.1.4 Provision

An expression in the content of a normative document that takes the form of a *statement*, an instruction, a *recommendation*, or a *requirement*.

2.1.5 Recommendation

An expression in the content of a document that conveys a suggested possible choice or course of action deemed to be advantageous without necessarily mentioning or excluding others.

2.1.6 Requirement

An expression, in the content of a document, that conveys objectively verifiable criteria to be fulfilled and where deviation is not permitted if conformance with the document is to be claimed.

2.1.7 State of the Art

A developed stage of technical *capability* at a given time as regards products, processes and services, based on the relevant consolidated findings of science, technology and experience.

2.1.8 Statement

An expression, in the content of a document, that conveys information.

2.2 Elements of a Document

2.2.1 Conditional

An element that is present depending on the *provisions* of the document.

2.2.2 Informative

An element intended to assist the understanding or use of the document or that provides contextual information about the content, background, or relationship with other documents.

2.2.3 Normative

An element that describes the scope of the document or sets out *provisions*.

2.2.4 Optional

An element that the writer of a document may choose to include or not.

Section 3. Document Structure

3.1 Document Types

AHRI deliverables, including standards and guidelines, are defined in Section 3.2 of the *AHRI Policy & Procedures for the Development of Standards*.

3.2 Informative or Informational Text

For AHRI standards, all informative or informational text shall appear in the appendices. Normative text is the default in standards; any informative text shall be clearly identified.

AHRI guidelines are entirely informative.

3.3 High Level Document Structure

AHRI standards and guidelines shall include the following structural elements:

- Front Matter (see Section 3.4)
- Body, sections for standards contain normative information (see Section 3.5)

- Appendices shall be identified as either normative or informative (see Section 3.6)

Refer to Table 1, Table 2, and Table 3 for the structural elements in standards, guidelines, and stand-alone appendices, and whether these elements are required, conditional, or optional, and either normative or informative.

Table 1 Overview of the Major Sections and Arrangement for Standards

Structural Element	Section	Required / Optional / Conditional	Normative / Informative	See Section(s):
Front matter	Front cover	Required	Normative	3.4.1
Front matter	Approvals under AHRI's ANSI and SCC accredited process	Conditional	Normative	3.4.2 and 3.4.3
Front matter	Withdrawal note and *statement* on front cover and first page after front cover	Conditional	Informative	3.4.17
Front matter	AHRI copyright on first page after front cover	Required	Informative	3.4.4
Front matter	AHRI safety disclaimer *statement*	Required	Normative	3.4.5
Front matter	International Classification for Standards (ICS) Code	Required	Informative	3.4.6
Front matter	Supersedure notice on first page after front cover	Required	Informative	3.4.7
Front matter	Dual standards reference note on first page after front cover	Conditional	Informative	3.4.8
Front matter	AHRI certification program disclaimer *statement*	Required	Informative	3.4.9
Front matter	Intent *statement* on second page after front cover	Required	Informative	3.4.10
Front matter	Review and amendment *statement* on second page after front cover	Required	Informative	3.4.11
Front matter	Origin and development *statement* on second page after front cover	Required	Informative	3.4.12
Front matter	Summary of changes	Conditional	Informative	3.4.13
Front matter	Committee membership lists	Required	Informative	3.4.14
Front matter	Consensus body list	Conditional	Informative	3.4.15
Front matter	Addendum and errata page	Conditional	Informative	3.4.16
Front matter	Table of contents	Required	Informative	3.4.18
Body	Section 1: Purpose	Required	Normative	3.5.1
Body	Section 2: Scope	Required	Normative	3.5.2
Body	Section 3: Definitions	Required	Normative	3.5.3
Body	Section: Classifications	Optional	Normative	3.5.4
Body	Section: Test Requirements	Required	Normative	3.5.5
Body	Section: Rating Requirements	Required	Normative	3.5.6
Body	Section: Minimum Data Requirements for Published Ratings	Required	Normative	3.5.7
Body	Section: Operating Requirements	Conditional	Normative	3.5.8
Body	Section: Marking and Nameplate Data	Conditional	Normative	3.5.9
Body	Section: Conformance Conditions	Required	Normative	3.5.10
Body	Additional sections	Optional	Normative or Informative	—
Appendices	Appendix A: References - Normative	Required	Normative	3.6.1
Appendices	Appendix B: References - Informative	Required	Informative	3.6.2
Appendices	Appendix: Methods of Testing for Rating Equipment – Normative	Optional	Normative	3.6.3
Appendices	Additional appendices and optional placeholder for stand-alone appendices (SAA)	Optional	Normative or Informative	3.6.4 and 3.6.5

Table 2 Overview of the Major Sections and Arrangement for Guidelines

Structural Element	Section	Required / Optional / Conditional	See Sections:
Front matter	Front Cover	Required	3.4.1
Front matter	Withdrawal note and *statement* on front cover and first page after front cover	Conditional	3.4.17
Front matter	AHRI copyright on first page after front cover	Required	3.4.4
Front matter	AHRI safety disclaimer *statement*	Required	3.4.5
Front matter	International classification for standards (ICS) code	Required	3.4.6
Front matter	Supersedure notice on first page after front cover	Required	3.4.6
Front matter	Dual guideline reference note on first page after front cover	Conditional	3.4.8
Front matter	AHRI certification program disclaimer *statement*	Required	3.4.9
Front matter	Intent *statement* on second page after front cover	Required	3.4.10
Front matter	Review and amendment *statement* on second page after front cover	Required	3.4.11
Front matter	Origin and development *statement* on second page after front cover	Required	3.4.12
Front matter	Summary of changes	Conditional	3.4.13
Front matter	Committee membership lists	Required	3.4.14
Front matter	Addendum and errata page	Conditional	3.4.16
Front matter	Table of contents	Required	3.4.18
Body	Section 1: Purpose	Required	3.5.1
Body	Section 2: Scope	Required	3.5.2
Body	Section 3: Definitions	Required	3.5.3
Body	Additional Sections	Optional	—
Appendices	Appendix A: References - Informative	Required	3.6.2
Appendices	Additional Appendices	Optional	3.6.4

The sections in stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices.

Table 3 Overview of the Major Sections and Arrangement for Stand-alone Appendices (SAA)

Structural Element	Section	Required / Optional / Conditional	Normative or Informative	See Section:
Front matter	Front cover	Required	Normative	3.4.1
Front matter	Approvals under AHRI's ANSI and SCC accredited process	Conditional	Normative	3.4.33.4.2 and 3.4.3
Front matter	Withdrawal note and *statement* on front cover and first page after front cover	Conditional	Informative	3.4.17
Front matter	AHRI copyright on first page after front cover	Required	Informative	3.4.4
Front matter	AHRI safety disclaimer *statement*	Required	Normative	3.4.5
Front matter	International classification for standards (ICS) code	Required	Informative	3.4.6
Front matter	Supersedure notice on first page after front cover	Required	Informative	3.4.7
Front matter	Dual standards reference note on first page after front cover	Conditional	Informative	3.4.8
Front matter	Intent *statement* on second page after front cover	Required	Informative	3.4.10
Front matter	Review and amendment *statement* on second page after front cover	Required	Informative	3.4.11
Front matter	Origin and development *statement* on second page after front cover	Required	Informative	3.4.12
Front matter	Summary of changes	Conditional	Informative	3.4.13
Front matter	Committee membership lists	Required	Informative	3.4.14
Front matter	Addendum and errata page	Conditional	Informative	3.4.16
Front matter	Table of contents	Required	Informative	3.4.18
Body	Section [SAA Letter]1: Purpose	Required	Normative	3.5.1
Body	Section [SAA Letter]2: Scope	Required	Normative	3.5.2
Body	Section [SAA Letter]3: Definitions for SAA-specific terms	Optional	Normative	3.5.3
Body	Section: Classifications	Optional	Normative	3.5.4
Body	Section: Test Requirements	Optional	Normative	3.5.5
Body	Section: Rating Requirements	Optional	Normative	3.5.6
Body	Section: Minimum Data Requirements for Published Ratings	Optional	Normative	3.5.7
Body	Section: Operating Requirements	Optional	Normative	3.5.8
Body	Section: Marking and Nameplate Data	Optional	Normative	3.5.9
Body	Section: Conformance Conditions	Optional	Normative	3.5.10
Body	Section: References in Appendix - Normative	Optional	Normative	3.6.1
Body	Section: References in Appendix - Informative	Optional	Informative	3.6.2

3.4 Front Matter

Document front matter shall only include objective, non-technical meta-information about the document and shall be prepared by AHRI staff independent of the consensus development process.

AHRI standards, guidelines, and stand-alone appendices shall contain front matter components in the following order, as applicable: cover title page, AHRI copyright *statement*, AHRI safety disclaimer *statement*, supersedure *statement*, dual standard reference, the AHRI certification program disclaimer *statement*, intent *statement*, review and amendment *statement*, origin and development *statement*, summary of changes, working group (SWG) and committee (STC and SSC) membership list(s) with the *statement* regarding committee membership and each scope *statement*, consensus body (CB) membership list, and table of contents.

The origin and development *statement* shall be a comprehensive history of the document from the first edition, including the purpose, major changes in the various editions through the years, and any changes in the committee structure during these periods.

An AHRI standard, guideline, or stand-alone appendix shall not contain AHRI Certification Program *provisions* or normative references to AHRI Certification Programs.

3.4.1 Front Cover

The front cover is an *informative element* that is required for all documents.

The front cover title page shall carry the AHRI numeric or alphabetical designation for the document; the title of the document; the edition year; the AHRI logo; and the AHRI address and contact information.

The front cover page size is 8 ½in by 11 in. The front cover page shall have two text boxes without borders. The text box for the standard designation/guideline letter/appendix letter shall appear flush left at the top of the page and use font style Nunito Sans Extra, font size 18, bold font, and allow for two lines. The text box for the title of the document shall appear flush left in the middle of the page and use font style Nunito Sans Light, font size 33.

Examples of front covers are shown in Appendix A.

3.4.2 American National Standards Institute (ANSI) Designation and Logo

The ANSI designation and logo are *informative elements* that are conditional for standards and stand-alone appendices.

Standards and stand-alone appendices that are approved as American National Standards (ANS) shall follow formatting requirements of ANSI's *Guidelines for ANSI Logo and Mark Use*.

After a standard is approved as an ANS, the AHRI Standards staff shall:

- Update the standard front cover page with the ANSI logo. See Section 3.4.1 and examples in Section A.2 and Section A.5.
- Update the standard title in the page headers (see Section 3.4.19) in the body of the standard.
- Add the approval date to the origin and development *statement* (see Section 3.4.12).

See Section 3.2.3 of the *AHRI Policy & Procedures for the Development of Standards* for the layout of the ANSI designation in the standard title. AHRI standards that are ANS shall have the year in the title remain the same as the original publication if accreditation is approved in a subsequent year.

If a published standard has the ANS accreditation administratively withdrawn, then the AHRI Standards staff shall update the front cover page, page headers, and relevant front matter information as appropriate.

The ANSI Executive Subcommittee (ExSC) provides the following policy concerning translations of ANS:

- An ANS may not be translated into another language and published as an ANS.
- The ANS mark and the words "an American National Standard" may not appear on a translation of an ANS.
- An ANSI Standards Developer (ASD) may translate their documents, but the translations cannot be published with the ANS mark as an ANS.
- ExSC recommends inclusion of the following language on the translated document:

  "This document is a translation of the English version of an American National Standard. The only version approved by the American National Standards Institute is the English language version."
- The exception to the above is an identical national adoption where the translation was done by ISO or IEC and is an official ISO or IEC publication.

The ANSI logo is shown in in Figure 1. Examples of the ANSI logo on cover pages are shown in Section A.2 and Section A.5.

Figure 1 ANSI Logo

3.4.3 National Standards of Canada (NSC) and Standards Council of Canada (SCC) Designation and Logos

The SCC designation and logos are *informative elements* that are conditional for standards and stand-alone appendices.

Documents that are approved by the Standards Council of Canada (SCC) shall follow formatting requirements of the SCC's *Requirements & Guidance – Accreditation of Standards Development Organizations* (*R&G – SDO Accreditation*).

After a standard is approved as an NSC, the AHRI Standards staff shall:

- Update the standard front cover page with the bilingual SCC and NSC logos and approval date. See Section 3.4.1 and examples in Section A.3 through and Section A.5.
- Update the standard title in the page headers (see Section 3.4.19) in the Body of the standard.
- Add the approval date to the origin and development *statement* (see Section 3.4.12).
- Add front matter information required by the SCC *R&G – SDO Accreditation*.
- Publish the French translation with the SCC and NSC logos. French translations for SCC approved standards that are ANS shall not include the ANSI logo and shall not include "ANSI" in the designation (see Section 3.4.2).

See Section 3.2.3 of the *AHRI Policy & Procedures for the Development of Standards* for the layout of the SCC designation in the standard title. AHRI standards that are accredited by SCC shall have the year in the title remain the same as the original publication if accreditation is approved in a subsequent year.

If a published standard has the NSC accreditation administratively withdrawn, then the AHRI Standards staff shall update the front cover page, page headers, and relevant front matter information as appropriate.

The bilingual SCC logos are shown in Figure 2 and Figure 3 and the bilingual NSC logos are shown in Figure 4 and Figure 5. Examples of the SCC and NSC logos on cover pages are shown in Section A.3, Section A.4, and Section A.5.

Figure 2 SCC Logo Bilingual English First

Figure 3 SCC Logo Bilingual French First

Figure 4 NSC Logo Biligual English First

Figure 5 NSC Logo Biligual French First

3.4.4 AHRI Copyright

The AHRI copyright is an *informative element* that is required for all documents.

The AHRI logo and copyright *statement* with copyright mark with the published year shall appear centered at the top of the first front matter page above the AHRI safety disclaimer in a text box. The required wording for the AHRI copyright is shown in the following text box.

AHRI

©Copyright 2023, by Air-Conditioning, Heating, and Refrigeration Institute

Registered United States Patent and Trademark Office

Printed in USA

3.4.5 AHRI Safety Disclaimer

The AHRI safety disclaimer *statement* is an *informative element* that is required for all documents.

The safety disclaimer shall be placed below the AHRI copyright *statement* on the first front matter page, after the front cover of each standard in a text box. The required wording for the AHRI safety disclaimer *statement* is shown in the following text box.

IMPORTANT

SAFETY DISCLAIMER

AHRI does not set safety standards and does not certify or guarantee the safety of any products, components or systems designed, tested, rated, installed, or operated in accordance with this standard/guideline. It is strongly recommended that products be designed, constructed, assembled, installed, and operated in accordance with nationally recognized safety standards and code requirements appropriate for products covered by this standard/guideline.

AHRI uses its best efforts to develop standards/guidelines employing state of the art and accepted industry practices. AHRI does not certify or guarantee that any tests conducted under its standards/guidelines will be non-hazardous or free from risk.

3.4.6 International Classification for Standards (ICS)

The ICS is an *informative element* that is required for all documents.

The ICS code shall appear centered below the safety disclaimer *statement* and above the supersedure note. Common ICS codes used by AHRI are available at:

https://app.smartsheet.com/b/publish?EQBCT=4a7aa9e41b3148938ea8f409a9898fbf

The ISO International Standards Catalog is available at:

https://www.iso.org/standards-catalogue/browse-by-ics.html

An example ICS code appears in the following text box. See an example of the ICS Code on the first front matter page following the cover page in Section B.1.

ICS Code: 91.140.65

3.4.7 Supersedure Notice

The supersedure notice is an *informative element* that is required for all documents.

The appropriate *statement* identifying the version of a document shall be placed inside the first page following the front cover page of standards as shown in the following text boxes. See an example of the supersedure notice on the first front matter page following the cover page in Section B.1.

If a first-generation document is created, use the required wording in the following text box:

Note:

This is a new [standard/guideline/appendix]; a prior version does not exist.

If an existing document is revised, use the required wording in the following text box:

Note:

This [standard/guideline] supersedes AHRI [Standard/Guideline/Appendix] [number]-[year] [(units)]

If an existing document is reaffirmed, use the required wording shown in the following text box, placing it below the new standard or revised standard note.

This [standard/guideline/appendix] was reaffirmed [month year].

If a document is withdrawn, specific wording to indicate this status shall appear after the new standard, revised standard, or reaffirmed standard note as shown in the following text box. See an example front matter on the first page after the cover page in Section B.1.

This [standard/guideline/appendix] was withdrawn [Month Year].

3.4.8 Dual Standards Reference

The dual standards reference is an *informative element* that is conditional for all documents.

The reference to the dual document in I-P or SI units shall appear below the supersedure notice. The required wording for this reference is shown in the following text box. An example front matter on the first page after the cover page is shown in Section B.1.

> This [standard/guideline/appendix] supersedes AHRI Standard [number]-[year] [(units)].
> For [units] ratings, see AHRI [Standard/Guideline/Appendix] [number]-[year] [(units)].

3.4.9 AHRI Certification Program Disclaimer

The AHRI certification program disclaimer *statement* is an *informative element* that is required for all documents.

The AHRI Certification Program Disclaimer *statement* shall appear below the supersedure notice and dual standards reference *statement* (if applicable). The required wording for the AHRI Certification Program Disclaimer is shown in the following text box. An example front matter on the first page after the cover page is shown in Section B.1.

> **AHRI CERTIFICATION PROGRAM DISCLAIMER**
>
> AHRI standards, guidelines, and appendices are developed independently of AHRI Certification activities and can have scopes that include products that are not part of the AHRI Certification Program. The scope of the applicable AHRI Certification Program can be found on AHRI's website at http://www.ahrinet.org.

3.4.10 Intent Statement

The intent *statement* is an *informative element* that is required for all documents.

All AHRI standards and guidelines shall have an intent *statement* that shall appear on the second front matter page after the cover page. An example of the intent *statement* is shown in the following text box.

> **Intent**
>
> This standard is intended for the guidance of the industry, including manufacturers, engineers, installers, contractors, and users.

The intent *statement* of a stand-alone appendix shall include the designation of the parent standard and applicability of the appendix, for example, applicability to MENA or Canada.

An example intent statement for a stand-alone regional appendix is shown in the following text box.

> **Intent**
>
> This appendix accompanies AHRI Standard 3210-2023 (SI/I-P) and provides additional information and requirements for use in the XYZ region, and is intended for the guidance of the industry, including manufacturers, engineers, installers, contractors, and users.

An example front matter on the second page after the cover page is shown in Section B.2.

3.4.11 Review and Amendment Statement

The review and amendment *statement* is an *informative element* that is required for all documents.

All AHRI standards, guidelines, and regional appendices shall have a review and amendment *statement* on the second front matter page after the intent *statement*. See the example of the review and amendment *statement* is shown in the following text box. An example front matter on the second page after the cover page is shown in Section B.2.

Review and Amendment

This standard is subject to review and amendment as technology advances.

3.4.12 Origin and Development Statement

The origin and development *statement* is an *informative element* that is required for all documents.

All AHRI standards, guidelines, stand-alone appendices shall have an origin and development *statement* prepared by AHRI staff, independent of the consensus development process. The origin and development *statement* shall not contain *requirements*, *permissions*, or *recommendations*.

This *statement* shall appear on the second front matter page after the review and amendment *statement*. If the standard has accreditation from ANSI or SCC, it shall include a *statement* indicating the date of ANSI or SCC approval, or both. An effective date is optional. The list of previous editions and the level of detail should not be longer than a few paragraphs or bullets. See the example of the origin and development *statement* in the following text box. See an example front matter on the second page after the cover page in Section B.2.

202x Edition

This edition of AHRI Standard [number-year (units)], *Performance Requirements of XXXX*, was prepared by the XXXX Standards Working Group / XXXX Standards Technical Committee. It was approved by the XXX Standards Subcommittee on year Month day, [with an effective date of year Month day].

Origin and Development of AHRI [number]

In 2005 the XXX Product Section identified the need for XXXXX and developed the first edition to provide a new definition of XXX.

In 2010 the standard was reaffirmed.

In 2015 an appendix was adopted to provide guidance to the AHRI Committees, regulatory officials, and others that addressed XXXX.

In 2020 the standard was extensively rewritten to introduce nomenclature related to XXXX.

3.4.13 Summary of Changes

The summary of changes is an *informative element* that is conditional for all documents.

If a document supersedes a previous addition or replaces a withdrawn document, then a sentence or paragraph shall be added to the origin and development *statement* outlining substantive changes in the latest revision. This should not be a detailed list of specific changes but instead a summary of substantive technical changes, topics addressed, and rationale for changes.

If a committee wishes to include a foreword in the standard, the forward shall be incorporated into the summary of changes.

See the summary of changes example in the following text box. See an example front matter on the second page after the cover page in Section B.2.

AHRI Standard [number-year (units)] contains the following updates to the previous edition:

- XXXX language has been consolidated into one central section
- Definitions have been expanded to include XXXX and XXXX
- Language has been added to provide XXXX
- Additional language has been added to clarify XXXX requirements
- New provisions have been added for testing XXXX
- Operating conditions have been harmonized with AHRI XXXX and now include XXXX.

3.4.14 Committee Membership Lists Pages

The committee membership lists are *informative elements* that are required for all documents.

The pages following the summary of changes page shall list the members of the standards working group (SWG), if applicable, the standards technical committee (STC), the standards subcommittee (SSC), and the consensus body (CB), if applicable. The title on the first page of these membership lists shall be *Committee Personnel*. Each list shall be formatted in a table, and these lists shall include the individuals who were voting and nonvoting members of the respective committees at the time of balloting.

The list shall be organized by company/organization and committee officers (chair and vice-chair), company/organization principal members and alternate members, with the primary listed with each alternate and nonvoting committee member.

The list for voting companies and organizations shall include the company and name of the chair first, followed by the company and name of the vice chair second, followed by the primary, alternate, and nonvoting committee members in alphabetical order by company/organization name.

Alternate voters from the same voting company/organization shall appear below the primary voting members, alphabetically by last name, together with the company/organization name.

Nonvoters from voting companies/organizations shall appear below the alternate voting members, alphabetically by last name, together with the company and organization name.

Nonvoting companies/organizations shall be listed alphabetically below the voting companies and organizations and their participants shall be listed alphabetically by last name. This list shall include all the members' companies/organizations represented spelled out in full.

The AHRI staff liaison(s) assigned to each committee at the time of voting shall be included at the end of the committee list.

See the example committee membership list in the following text box. See examples of committee membership lists, the scope *statements*, and the committee list *statement* appearing on the first page after the summary of changes in Section B.3.

[Name] [Standards Working Group / Standards Technical Committee / Standards Subcommittee]

Company/Organization	Participant	Voting Role
Voting Organizations		
[Company Name]	[Participant Name], Chair	Alternate
	[Participant Name]	Primary
[Company Name]	[Participant Name], Vice-chair	Primary
	[Participant Name]	Alternate
	[Participant Name]	Nonvoter
[Company/Organization Name]	[Participant Name]	Primary
	[Participant Name]	Alternate
Nonvoting Organizations		
[Company/Organization Name]	[Participant Name]	Nonvoter
[Company/Organization Name]	[Participant Name]	Nonvoter
	[Participant Name]	Nonvoter
[Name of AHRI EA]		AHRI Staff Liaison

Clause 6.4 of SCC's *Requirements & Guidance – Accreditation of Standards Development Organizations* (*R&G – SDO Accreditation*) requires that standards have balanced Canadian interest in the development stage. The NSC introductory pages shall include the names of the technical committee members or the number of technical committee members representing the interest categories as described in Clause 6.4 of the *R&G – SDO Accreditation*.

Refer to Section 4.6.4 of the *AHRI Policy & Procedures for the Development of Standards* to determine the interest category classification.

See the example committee membership list for NSC standards in the following text box.

[Name] [Standards Working / Standards Technical Committee / Standards Subcommittee]

Company/Organization	Participant	Voting Role	Interest Category Classification	State or Province / Country
Voting Organizations				
[Company Name]	[Participant Name], Chair	Alternate	Product Manufacturer	PA, USA
	[Participant Name]	Primary	Product Manufacturer	PA, USA
[Company Name]	[Participant Name], Vice-chair	Primary	Component Manufacturer	ON, Canada
	[Participant Name]	Alternate	Component Manufacturer	ON, Canada
	[Participant Name]	Nonvoter	Component Manufacturer	ON, Canada
[Company/Organization Name]	[Participant Name]	Primary	Testing Laboratory	WI, USA
	[Participant Name]	Alternate	Testing Laboratory	WI, USA
Nonvoting Organizations				
[Company/Organization Name]	[Participant Name]	Nonvoter	Regulatory Agency	Washington, DC, USA
[Company/Organization Name]	[Participant Name]	Nonvoter	Consumer/User	CA, USA
	[Participant Name]	Nonvoter	General Interest	QC, Canada
[Name of AHRI EA]		AHRI Staff Liaison		

The SWG, STC, and SSC membership lists shall be followed by each group's scope *statement*. An example scope for an STC is shown in the following text box.

[Name] Standards Technical Committee Scope: This committee shall have responsibility for…

The committee membership lists shall be followed by a *statement* that reads as shown in the following text box.

These lists represent the membership at the time the Standards Working Group, Standards Technical Committee, and Standards Subcommittee were balloted on the final text of this edition. Since that time, changes in the membership may have occurred. Membership on these committees shall not in and of itself constitute an endorsement by the committee members or their employers of any document developed by the committee on which the member serves.

3.4.15 Consensus Body Membership List

The consensus body membership list is an *informative element* that is conditional for standards and stand-alone appendices.

If a standard is approved as an ANS under AHRI's ANSI accredited process, the consensus body CB membership list(s) shall appear after the committee lists. This list shall include only those persons who were voting members of the consensus body at the time of balloting. The list shall be organized by the name of the CB members in alphabetical order by last name and include the name of the organization or company represented, and both shall be spelled out in full. The interest category classification shall be shown.

Refer to Section 4.6.4 of the *AHRI Policy & Procedures for the Development of Standards* to determine the interest category classification.

An example of a CB list is shown in the following text box. See an example of a CB membership list on the first page after the committee lists in Section B.4.

[SSC Name] Consensus Body

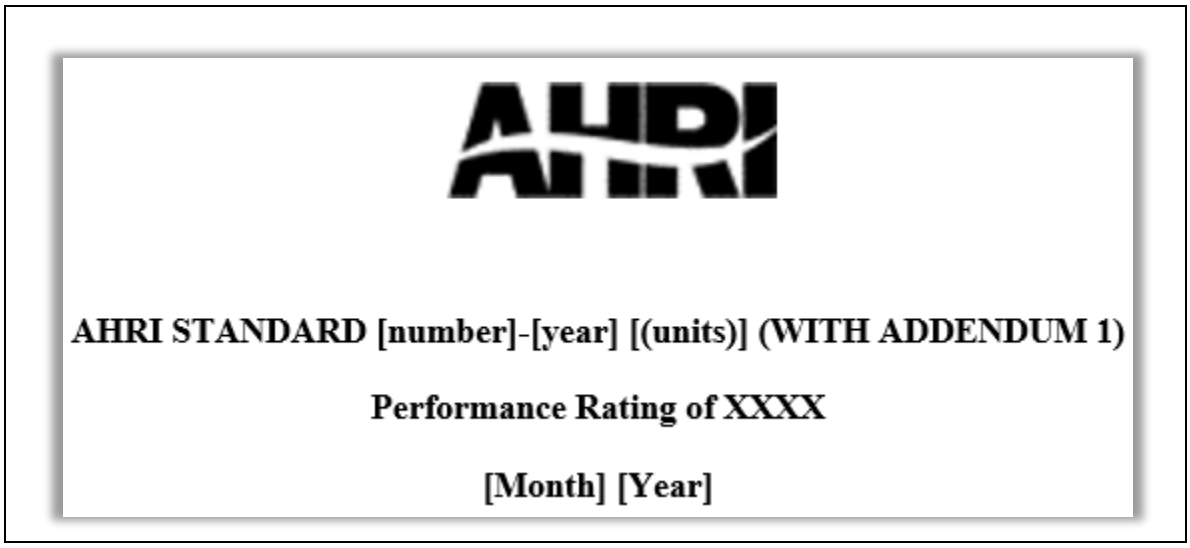
Participant	Company / Organization	Interest Category Classification
[Name]	[Company / Organization]	[Category]
[Name]	[Company / Organization]	[Category]
[Name]	[Company / Organization]	[Category]
[Name]	[Company / Organization]	[Category]
[Name]	[Company / Organization]	[Category]
[Name]	[Company / Organization]	[Category]

3.4.16 Addendum and Errata Page

Addendum and errata pages are *informative elements* that are conditional for all documents.

Addenda and errata are defined in Section 2.2.1 and Section 2.2.18, respectively, of the *AHRI Policy & Procedures for the Development of Standards*. If the standard or guideline has addenda or errata, an addendum or errata page shall appear on a separate page that shall be the first page after the cover page and before the other front matter information.

This page shall include the AHRI logo at the top, the standard designation with the addendum or errata number(s), the title of the standard or guideline, the units, and the year and month the addendum or errata is published. The page title shall read as shown in the following text box.



The description of the addendum or errata shall include the *statement* shown in the following text box.

> Addendum/Errata X of AHRI Standard XXX-202X, is provided as follows. The following change has been incorporated (deletions are shown by ~~strikethroughs~~ and additions by shading) into the already published 20XX version of AHRI Standard XXXX to prevent confusion.

Changes shall appear below the addendum or errata description *statement* and in the body of the document in their original location.

Addenda or errata containing multiple items shall be listed numerically in sequence (1., 2., 3…).

If a standard or guideline contains multiple addenda or errata, then each occurrence shall appear sequentially on a separate page, with the most recent addendum or errata appearing first and the initial addendum or errata appearing last.

An example of addenda/errata appears in Appendix E.

3.4.17 Withdrawn Documents

A withdrawal statement is an *informative element* that is conditional for all documents.

The STC shall determine if a withdrawn document shall remain published on AHRI's website.

Documents that have been withdrawn in accordance with Section 7.1.2 of the *AHRI Policy & Procedures for the Development of Standards* shall include a note above the standard designation on the cover page and in the Origin and Development *Statement* (Section 3.4.12). This note shall be drafted by the STC and approved by the SSC. See the example front cover page withdrawal note shown in the following text box. See an example of a withdrawal cover page in Section A.6.

> Note: This [standard/guideline/appendix] has been withdrawn because the terms and values produced by using the [standard/guideline/appendix] have not been widely accepted and are no longer supported by the member companies.

The withdrawal note in the supersedure note shall include the date of withdrawal as shown in the following text box.

Note:

This [standard/guideline/appendix] has been withdrawn because the terms and values produced by using the [standard/guideline/appendix] have not been widely accepted and are not currently supported by the member companies.

Withdrawn from publication [Month Year].

This standard supersedes AHRI Standard [number-year (units)].

3.4.18 Table of Contents

The table of contents is an *informative element* that is required for all documents.

The table of contents shall start on the page following the committee membership list page(s). Two levels of section heads shall be included in the Table of Contents.

There shall be separate tables of contents for Section Titles (both body and appendices), Figures, and Tables. Equations shall not be included in the Table of Contents.

See the Table of Contents of this document for an example of a standard/guideline table of contents.

3.4.19 Page Headers

Page headers shall appear in the main body of the document beginning on the first page of Section 1 and continuing through the body and the appendices of the document.

The header shall appear on the top right side of the page and include the AHRI designation, units, and year of publication. for example, AHRI Standard 3210–2023 (I-P).

Examples of a standard with both SCC and ANSI accreditation and a guideline are shown in following two text boxes.

CAN/ANSI/AHRI Standard 3210-2023 (SI/I-P)

AHRI Guideline Z-2023 (SI/I-P)

Documents that are reaffirmed shall indicate the year of reaffirmation preceded by an “R” in parentheses after the initial publication year in the page header. See the example in the following text box.

AHRI Standard 3210-2019 (R2023) (SI/I-P)

Documents with addenda shall indicate this by including “with Addendum 1” or “with Addenda 1 and 2” following the original title of the document in the page header. See the example in the following text box.

AHRI Standard 3210-2023 (SI/I-P) with Addenda 1 and 2

Documents that are stand-alone regional appendices shall include the appendix letter, followed by the ASHRAE 169 climate code and the publication year in the page header. See the example in the following text box.

AHRI Standard 3210-2022 (SI/I-P) Appendix H 0B/1B-2023

3.4.20 Page Numbers

Page numbers shall begin on the first page of Section 1 and continue through the body and the appendices of the document.

The page numbers shall appear on the bottom right of the page.

3.5 Body

Section 3.5.1 through Section 3.5.10 shall be used to ensure consistency among the standards, guidelines, and stand-alone appendices published by AHRI. In any given standard, guideline, or stand-alone appendices, certain section headings listed may be omitted or additional headings may be inserted.

Section headings used in a standard, guideline, or stand-alone appendix shall appear in the sequence shown in Section 3.5.1 through Section 3.5.10.

3.5.1 Section 1: Purpose

Section 1 is *a normative element* that is required for all documents.

Each standard/guideline/stand-alone appendix shall have a clearly defined purpose. Example wording is shown in the following text box.

Section 1. Purpose

This [standard/appendix] establishes definitions, test requirements, rating requirements, minimum data requirements for *published ratings*, operating requirements, marking and nameplate data, and conformance conditions for positive displacement compressors.

The purpose *statement* for guidelines shall be to establish best practices.

3.5.2 Section 2: Scope

Section 2 is *a normative element* that is required for all documents.

Section identifies unique characteristics of the product/process necessary to define what is included within the standard/guideline/stand-alone appendix. This can include specifics regarding application, arrangement, components, and capacities.

The scope is a *normative element* because it delimits the subject of the document. The scope shall not contain *requirements*, *permissions*, or *recommendations*, shall appear only once in a document, and shall be worded as a series of *statements* of fact.

An exclusion list shall be limited to products that are otherwise within the scope of the standard.

See the example of a scope with an exclusion *statement* in the following text box.

Section 2. Scope

2.1 Scope

This standard applies to the rating and testing of complete factory-made *heat pump pool heaters* as defined in Section 3.

2.2 Energy Source

This standard applies only to air-source, electrically driven, mechanical compression type systems.

2.3 Exclusions

This standard does not apply to the following:

1) Individual assemblies
2) Unitary air-conditioners as defined in AHRI 210/240 with capacities less than 65,000 Btu/h
3) Unitary heat operated air-conditioning equipment
4) Water-source heat pumps as defined in AHRI/ASHRAE/ISO 13256-1:1998 (RA 2012)
5) Commercial and industrial unitary air-conditioning and heat pump equipment with capacities of 65,000 Btu/h or greater as defined in AHRI 340/360
6) Single package vertical air-conditioners and heat pumps as defined in AHRI 390
7) Package terminal air-conditioners and heat pumps as defined in AHRI 310/380

3.5.3 Section 3: Definitions

Section 3 is *a normative element* that is required for standards and guidelines, and optional for stand-alone appendices.

Section 3 defines how the listed terms shall be interpreted and shall contain only definitions. All definitions contained within the document shall appear in Section 3, and Section 3 shall include only terms used within the document.

All definitions shall be numbered individually within Section 3.

To the extent practicable, the *ASHRAE Terminology* shall be used for defining all terms used in AHRI standards. If terms do not appear in that webpage or are inaccurate for the purposes of the standard, an appropriate definition shall be included in the AHRI standard.

Each entry shall state the term being defined followed by a definition. The part of speech (for example, noun, verb, and adjective) may be identified as needed for clarification. A definition shall only describe the term being defined. Definition entries shall not contain *requirements* (meaning, no "shall" *statements*); only text related to defining the term shall be included. Definitions are descriptive and not prescriptive. The term being defined shall not appear in the definition for the term.

A definition entry may cross-reference the text of a section for a fuller definition, for examples or *requirements*.

The defined term shall be used consistently throughout the document. If a synonym needs to be included in the definition, the synonym shall appear in an informative note below the defined term. Synonyms shall not be used instead of the defined term in normative sections of the standard. See an example of a definition with an informative note in the following text box.

Free Air Discharge

A configuration of unit that is marketed only for use without discharge ducting and is not *raised floor plenum discharge*.

Note: Can be referred to as non-ducted discharge.

All hyphenated definitions shall have the second word lowercased. See the example in the following text box.

Ground Source Closed-loop Heat Pump

Where appropriate, the definition shall include the units applicable to the term. See the example in the following text box.

Energy Efficiency Ratio (EER2)

A ratio of the cooling capacity in Btu/h to the total power in watts at any given set of *rating conditions* expressed in (Btu/h)/W.

3.5.3.1 Required Content

The required wording for the first paragraph in this section shall be as shown in the following text box.

All terms in this document follow the standard industry definitions in the *ASHRAE Terminology* website unless otherwise defined in Section 3.2. These standard-specific defined terms are italicized throughout the standard.

If other references for definitions are used, such as Acoustical Society of America, they shall be included in this *statement*.

Primary or critical terms shall be included in the document as well as any terms defined differently than by ASHRAE.

Section 3 shall have two subsections. Subsection 3.1 shall be titled "Expressions of Provision" and shall include the terms and definitions in the following text box.

Expressions of Provision

Terms that provide clear distinctions between requirements, recommendations, permissions, options, and capabilities.

"Can" or "cannot"

Express an option or capability.

"May"

Signifies a permission expressed by the document.

"Must"

Indication of unavoidable situations and does not mean that an external constraint referred to is a requirement of the document.

"Shall" or "shall not"

Indication of mandatory requirements to strictly conform to the standard and where deviation is not permitted.

"Should" or "should not"

Indication of recommendations rather than requirements. In the negative form, a recommendation is the expression of potential choices or courses of action that is not preferred but not prohibited.

Guidelines shall not include a definition for "shall" and "shall not".

If a stand-alone appendix includes appendix-specific definitions, subsection 3.1 shall be titled "Appendix-specific Definitions," and the document shall not include the definitions for expressions of provision. The defined terms from the parent standard do not need to be restated in the stand-alone appendix.

Subsection 3.2 shall be titled "Standard-specific Definitions," or "Guideline-specific Definitions," as applicable, and include definitions relevant to the document. The definitions in the following text box shall be included in Subsection 3.2 if the terms are used in the standard:

Standard-specific Definitions

Bubble Point

Refrigerant liquid saturation temperature at a specified pressure.

Coefficient of Performance (COP)

A ratio of the cooling/heating capacity in watts to the power input values in watts at any given set of rating conditions expressed in watts/watt.

Standard Coefficient of Performance

A ratio of the capacity to power input value obtained at standard rating conditions.

Cooling Capacity

The capacity associated with the change in air enthalpy that includes both the *latent* and *sensible capacities* expressed in watts.

Latent Capacity

Capacity associated with a change in humidity ratio.

Sensible Capacity

Capacity associated with a change in dry-bulb temperature.

Dew Point

Refrigerant vapor saturation temperature at a specified pressure.

Energy Efficiency Ratio (EER)

A ratio of the *cooling capacity* in Btu/h to the power input value in watts at any given set of *rating conditions* expressed in Btu/(W·h).

Standard Energy Efficiency Ratio

A ratio of the capacity to power input value obtained at *standard rating conditions*.

Heating Capacity

The capacity associated with the change in dry-bulb temperature expressed in watts.

Integrated Energy Efficiency Ratio (IEER)

A weighted calculation of mechanical cooling efficiencies at full load and part load *standard rating conditions* expressed in Btu/W·h.

Integrated Part-load Value (IPLV)

A single number part-load efficiency figure of merit described in Section xxx of this standard.

Published Rating

A statement of the assigned values of those performance characteristics, under stated *rating conditions*, where a unit can be chosen to fit the application. These values apply to all units of the same nominal size and type (identification) produced by the same manufacturer. This includes the rating of all performance characteristics shown on the unit or published in specifications, advertising or other literature controlled by the manufacturer, at stated *rating conditions*.

Application Rating

A rating based on tests performed at rating conditions other than s*tandard rating conditions.*

Standard Rating

A rating based on tests performed at *standard rating conditions*.

Rating Conditions

Any set of operating conditions where a single level of performance results and causes only that level of performance to occur.

Standard Rating Conditions

Rating conditions used as the basis of comparison for performance characteristics.

Standard Air (definition used in SI standards)

Air weighing 1.204 kg/m^3 that approximates dry air at 21°C and 101.3 kPa.

Standard Air (definition used in I-P versions of dual standards as defined in Section 3.3.2 of the *AHRI Policy & Procedures for the Development of Standards*)

Air weighing 0.075 lb/ft^3 that approximates dry air at 70°F and at 29.92 in Hg.

Standard Air (definition used in joint standards as defined in Section 3.3.3 of the *AHRI Policy & Procedures for the Development of Standards*)

In SI units, air weighing 1.204 kg/m^3 that approximates dry air at 21°C and 101.3 kPa.

In I-P units, air weighing 0.075 lb/ft^3 that approximates dry air at 70°F and 29.92 in Hg.

3.5.3.2 Hierarchy of Entries

Definition entries in Section 3 shall be divided into primary entries and optional secondary and tertiary entries.

Primary and secondary entries shall consist of either of the following:

- An individual noun or a noun/modifier combination that is not part of a set. For example, “Fin”, “Fin Configuration”, and “Fin Pitch” are all individual main entries.

- A noun or a noun/modifier combination that groups a set of subentries. For example, "Coil' is a main entry that groups subentries "Bare Tube Coil", "Forced-circulation Air-cooling Coil", and "Forced-circulation Air-heating Coil."

Where a primary entry consists of a noun (for example, "coil" or "pressure") that serves to group sets of related secondary entries, the primary entry shall not be required to carry a definition. A secondary entry grouping a set of tertiary entries does not need a definition.

Secondary entries shall consist of terms that define specific types or examples of the primary entry. For example, "maximum pressure" and "minimum pressure" are secondary entries that define types of the primary "entry pressure". Tertiary entries shall consist of terms that define specific types of secondary entries. See the examples of primary, secondary, and tertiary terms in the following text box.

Energy Efficiency

Cooling Energy Efficiency

Cooling Coefficient of Performance (COPR)

A ratio of the net refrigerating capacity to the total input power at any given set of *rating conditions*. Refer to Equation 10.

Energy Efficiency Ratio (EER)

A ratio of the net refrigerating capacity to the total input power at any given set of *rating conditions*. Refer to Equation 11.

Power Input per Capacity (kw/tonR)

A ratio of the total input power to the net refrigerating capacity at any given set of *rating conditions*. Refer to Equation 12.

3.5.3.3 Alphabetizing Entries

Primary entries shall be listed in alphabetical order within Section 3. Secondary entries shall be listed in alphabetical order under the primary entry, and tertiary entries shall be listed alphabetically under the secondary entry.

3.5.3.4 Numbering Entries

All entries shall have section numbers.

Primary definition entries shall be numbered consecutively using a second-level heading.

Secondary definition entries shall be numbered consecutively using a third-level heading.

Tertiary definition entries shall be numbered consecutively using a fourth-level heading.

3.5.3.5 Acronyms and Uncommon Abbreviations in Definitions

If used, the abbreviation or acronym shall be included in parentheses after the initial use of the defined term, for example, "Coefficient of Performance (COP)." Each subsequent use within the document should be an abbreviation or an acronym only.

3.5.4 Section: Classifications

The classifications section is *a normative element* that is optional for standards and stand-alone appendices.

If included, the information shall appear in Section 4.

A product line may be separated into distinct classifications to identify unique characteristics or applications. Such classifications can be by unit size, physical orientation, capacity, operating characteristics, method of heating or cooling or any other designation that can clarify the intended usage and prescribed performance.

Table 4 is an example of classifications for water-source heat pumps:

Table 4 Example of Classification of Water-Source Heat Pumps

Designation	AHRI Type	Arrangement[1]	
Single Package (Ducted)	HSP-W	FAN	COMP
		EVAP	COND
Single Package (Free Delivery)	HSP-W-O	FAN	COMP
		EVAP	COND
Split System (Ducted)	HRCU-W	FAN	COMP
		EVAP	COND
Split System (Free Delivery)	HRCU-W-O	FAN	COMP
		EVAP	COND
Note: 1. Denotes cooling mode function			

3.5.5 Section: Test Requirements

The test requirements section is *a normative element* that is required for standards and optional for stand-alone appendices. Guidelines shall not include a test requirements section.

If a standard or stand-alone appendix includes classifications in Section 4, then the test requirements shall appear in Section 5. If a standard or stand-alone appendix does not include classifications, then test requirements shall appear as Section 4.

This section identifies all procedures and conditions necessary for testing the product. The appropriate test standard should be referenced, or if a standard does not exist, one should be developed and included in Appendix C of the standard. If testing must be done at conditions not specified within the test standard, these testing conditions shall be included in this section.

3.5.6 Section: Rating Requirements

The rating requirements section is *a normative element* that is required for standards and is optional for stand-alone appendices. This section shall follow the test requirements section. Guidelines shall not include a rating requirements section.

This section shall define the standard rating conditions, identify the rating data to be published (such as, capacity, EER, air flow, IPLV, and sound) and establish the verification testing uncertainties that apply to the rating data. Proposed wording for verification testing uncertainties is shown in the following text box:

Verification Testing Acceptance Criteria

To comply with this standard, measured test results shall not be less than [xx]% of *published rating* for performance ratios and capacity; shall not exceed [yy]% of *published ratings* for power; and shall not exceed [zz]% of *published ratings* for pressure drop.

In addition, this section should discuss all other aspects of rating data for the equipment covered by the standard. This should include defining part-load rating conditions or application ratings, or both, and their usage. If the values of the rating data must be expressed in specific units or certain increments, these should be specified in this section.

If a standard does not have any rating *requirements*, the section shall read:

"This standard does not have any applicable rating requirements."

3.5.7 Section: Minimum Data Requirements for Published Ratings

The minimum data requirements for published ratings section is *a normative element* that is required for standards and optional for stand-alone appendices. This section shall follow the rating requirements section.

The minimum data *requirements* for published ratings shall include those performance characteristics, at standard rating conditions, by which a product may be chosen to fit the application. At minimum, the wording in the following text box should be included in the standard:

Minimum Data Requirements for Published Ratings

As a minimum, *published ratings* shall include all *standard ratings*. All claims to ratings within the scope of this standard shall include the statement "Rated in accordance with AHRI Standard [xxx]". All claims to ratings outside the scope of this standard shall include the statement "Outside the scope of AHRI Standard [xxx]". *Application ratings* within the scope of the standard shall include a statement of the conditions under which the ratings apply.

If an STC determines that this section does not apply, the section shall include the following *statement*:

"This standard does not establish requirements for published ratings."

3.5.8 Section: Operating Requirements

The operating requirements section is a *normative element* that is conditional for standards and optional for stand-alone appendices. This section shall follow the minimum data requirements for published ratings section.

When production units are required to meet minimum operating *requirements*, these *requirements* shall be identified in this section. Examples of such operating *requirements* appear in the following text box:

1) Maximum Operating Conditions
   a) Ambient Air Temperature
   b) Condenser Entering Water Temperature
   c) Indoor Air Temperature
   d) Water Flow Rates
2) Minimum Operating Conditions
   a) Ambient Air Temperature
   b) Condenser Entering Water Temperature
   c) Indoor Air Temperature
   d) Water Flow Rates
3) Voltage (Minimum and Maximum)
4) Insulation Efficiency
5) Condensate Disposal
6) Air Infiltration

3.5.9 Section: Marking and Nameplate Data

The marking and nameplate data section is *a normative element* that is conditional for standards and optional for stand-alone appendices. This section shall follow the test requirements section.

This section shall require that the nameplate, as a minimum, displays the model number and the name of the manufacturer or supplier responsible for the performance rating. Additionally, where applicable, this section shall require that electrical characteristics are included. In such cases, at a minimum the *statement* shown in the following text box shall be included in the standard:

Nameplate voltages for 60 Hz systems shall include one or more of the equipment nameplate voltage ratings shown in AHRI 110. Nameplate voltages for 50 Hz systems shall include one or more of the utilization voltages in AHRI 110 or IEC 60038.

3.5.10 Section: Conformance Conditions

The conformance conditions section is *a normative element* that is required for standards and optional for stand-alone appendices. This section shall follow the marking and nameplate data section.

If the standard has conformance conditions the statement shown in the following text box shall be included:

> While conformance with this standard is voluntary, conformance shall not be claimed or implied for products or equipment within the standard's Purpose (Section 1) and Scope (Section 2) unless such product claims meet all of the requirements of the standard, and all of the testing and rating requirements are in complete compliance with the standard. Any product that has not met all the requirements of the standard shall not reference, state, or acknowledge the standard in any written, oral, or electronic communication.

If a standard does not have any conformance conditions, the section shall include the following statement:

"This standard does not establish conformance conditions."

3.6 Appendices

Each standard/guideline shall contain required appendices and can include additional optional appendices. Appendices shall each be designated as either Normative (mandatory language) or Informative (non-mandatory language).

Appendices can contain all structural elements including paragraphs, tables, and figures as found in the document body, as described in Section 5.8.

Appendices are numbered sequentially using capital letters (A, B, C…). Section numbering shall begin with the appendix letter followed by the section number (A.1., A.2., A.1.1., A.2.1. …). Table, figures, and equations shall be numbered continuously from the body of the document.

The required order of appendices is as follows.

3.6.1 Appendix: References - Normative

A normative reference appendix is a *normative element* that is required for standards. Guidelines shall not have normative appendices.

The opening *statement* for Appendix A in standards shall be included as shown in the following text box:

> This appendix lists all standards, handbooks, and other publications essential to the development and implementation of the standard. All references in this appendix are part of the standard.

If a stand-alone appendix includes a normative reference list, the list shall be in a subsection and shall follow the same format as Appendix A in a standard. The opening statement for normative references in a subsection of a stand-alone appendix is shown in the following text box.

> This section lists all standards, handbooks, and other publications not essential but that can provide useful information and background. All references in this section are part of the appendix.

All standards, handbooks, and other publications essential to the formation and implementation of the standard shall appear in the standard's Appendix A. A reference must be identified within the standard or normative appendices if it is to be included in Appendix A.

Any normative references included in a standard shall be listed in Appendix A. If a standard does not have any normative references, Appendix A shall include a statement of "None."

See Section 5.8.2 for formatting of references and examples in Appendix C.

3.6.2 Appendix: References - Informative

An informative reference appendix is an *informative element* that is required for standards and guidelines.

An opening *statement* for Appendix B in standards or Appendix A in guidelines shall be included as shown in the following text box:

> This appendix lists standards, handbooks, and other publications that can provide useful information and background but are not essential for the use of this [standard/guideline]. All references in this appendix are not part of the [standard/guideline].

If a stand-alone appendix includes an informative reference list, the list shall be in a subsection and shall follow the same format as Appendix B in standards or Appendix A in guidelines. The opening statement for a section with informative references in a stand-alone appendix is shown in the following text box.

This section lists standards, handbooks, and other publications that can provide useful information and background but are not essential for the use of this appendix. All references in this section are not part of the appendix.

All standards, handbooks and other publications that provide useful information and background but are not essential shall appear in the standard's Appendix B (or Appendix A for guidelines). References in this appendix are not part of the standard. If there are no informative references in a standard or guideline, include a statement of "None."

All informative references included in standards shall be listed in Appendix B.

For guidelines, all references are informative and shall be listed Appendix A.

See Section 5.8.2 for formatting of references and examples in Appendix C.

3.6.3 Appendix: Methods of Testing for Rating Equipment - Normative

An appendix for methods of testing for rating equipment is an optional *normative element* for standards.

If no appropriate test standard exists or if ASHRAE is unable to prepare one in a timely manner, one should be developed by the developing committee and be included in this optional appendix. This appendix should contain all information included in an ASHRAE standard. If there are no methods of test defined in a standard, include a statement of "None."

Methods of Testing for Rating Equipment – Normative references shall be designated with the next appendix alphabetical letter.

Guidelines shall not have normative appendices.

3.6.4 Additional Appendices

Additional appendices shall be designated as either "normative" in the appendix title, using mandatory language, or "informative" in the appendix title using non-mandatory language. See Section 4.11 and Table 6.

Guidelines shall not have normative appendices.

3.6.5 Placeholder Appendix Page

If an appendix is removed from a revised document, then a placeholder page shall be included with a statement indicating that the appendix has been removed.

If a stand-alone appendix is developed for a standard, then a placeholder appendix page with a reference to the separate stand-alone appendix document shall be included.

See examples of placeholder pages in Appendix D.

Section 4. Editorial Style

Editorial style shall focus on the grammatical format used throughout the document. See Section 7 for the use of units in SI and I-P versions of standards, guidelines, and stand-alone appendices.

4.1 Style

Style, including grammar, punctuation, and conventional presentation of text, shall conform to the *recommendations* of *the Chicago Manual of Style* (*CMOS*).

4.2 Inclusive Terminology

Inclusive terminology shall be used to describe technical capabilities and relationships. Insensitive, archaic, and non-inclusive terms shall not be used. Terminology perceived or expected to be perceived as welcoming by everyone, regardless of their sex, gender, race, color, religion, age, ableness, ethnicity, or nationality shall be used.

New documents shall be developed using inclusive terminology. Existing and legacy documents shall be updated to identify and replace non-inclusive terms with alternatives that are more descriptive and tailored to the technical *capability* or relationship.

4.3 Spelling

Spelling and definitions of common words and terms shall follow *Webster's Collegiate Dictionary, 11th edition.*

When a choice of spelling is given in *Webster's*, the simpler form shall be used in AHRI documents.

Specific HVAC-related terminology shall have the spellings and meanings as set forth in the *ASHRAE Terminology* found on the ASHRAE website.

When a standard definition is needed, *Webster's* shall be utilized where the meaning is correct and accurate as used in AHRI documents.

4.4 Numerals Versus Words

To be consistent with data in tables and figures in a document, numbers that appear in text with abbreviated units of measure shall appear as numerals. Numbers that appear with units that are not abbreviated should be spelled out.

Documents shall adhere to the following sections of the *CMOS*:

- Section 9.2: In nontechnical contexts, whole numbers from zero through one hundred should be spelled out.
- Section 9.5: When a number begins a sentence, the number is always spelled out.
- Section 9.7: Where many numbers are used within a paragraph or a series of paragraphs, maintain consistency in the immediate context. If according to a given rule, numerals must be used for one of the numbers in each category, then use them all in that category. (An exception should be made at the beginning of the sentence; see Section 9.5 of *CMOS*.) In the same sentence or paragraph, however, items in one category may be given as numerals and items in another spelled out.

4.5 Capitalization

Capitalization shall follow conventional usage, including the capitalization of proper names.

4.5.1 Titles, Figure and Table Titles, and Text Headings

Titles shall follow Section 8.159 of *CMOS*. The conventions of headline style are governed by emphasis and grammar. The following rules are intended to facilitate the consistent styling of titles:

1) Capitalize the first word in titles and subtitles, and capitalize all other major words such as nouns, pronouns, verbs, adjectives, adverbs, and conjunctions listed in rule 4).
2) Lowercase the articles "the," "a," and "an."
3) Lowercase prepositions, regardless of length, except when used adverbially or adjectivally ("up" in "Look Up," "down" in "Turn Down," "on" in "The On Button," "to" in "Come To") or when prepositions compose part of a Latin expression used adjectivally ("De Facto," "In Vitro").
4) Lowercase the common coordinating conjunctions "and," "but," "or," "for," and "nor."
5) Lowercase "to" as a preposition (rule 3)), and as a part of an infinitive ("to Run," "to Hide"), and lowercase "as" in any grammatical function.
6) Lowercase the part of a proper name that are lowercased in text, such as "de" or "von."

4.5.2 Terms

Terms such as grade, class, specimen, and type shall be capitalized when the reference is specific.

4.5.3 Defined Terms

If a term defined in Section 3 of the standard, guideline, or stand-alone appendix is used within the text of the document, the term shall be italicized.

4.6 Acronyms and Uncommon Abbreviations

Accepted editorial procedures of specialized publications in the specific technical field shall be used as a guide to abbreviations.

All acronyms and any abbreviations that are not in common use shall be spelled out with the acronym or abbreviation following in parentheses for the first use of the term in the document. Each subsequent use shall be an acronym or abbreviation only.

4.7 Units of Measure

When accompanied by a specific quantity, units of measure shall be abbreviated. Units of time shall be spelled out (month, day, hour, minute, second).

The following abbreviation rules are used for units of measurement:

- Inches and feet shall be abbreviated as “in” and “ft”
- Meters shall be abbreviated as “m”

Spacing rules follow Section 10.58 of *CMOS* for both I-P and SI:

- Degrees and percentages shall not have a space between the number and the symbol
- There shall not be a space between a degree symbol and the “F” or the “C”
- A degree symbol shall be designated using character code 00B0 from the Basic Latin Unicode (hex) subset of Microsoft Word
- The degree symbol shall not be used with Kelvin
- A tolerance with a plus-minus sign shall have a space between the symbol and number
- A negative indicator shall not have a space between the sign and the number

All other units shown in Table 5 shall have a space between the number and the units.

Examples for spacing rules are shown in the following text box:

- 12%
- 12°C
- 12K
- ± 12
- -12

Table 5 Examples of Commonly Used Units

Characteristic	SI Description	SI Designation	I-P Description	I-P Designation
Cooling or heating capacity	watt	W	Btu per hour	Btu/h
Energy efficiency ratio (EER)	watt/watt	W/W	Btu per hour per Watt	(Btu/h)/W
Flow rate	meters cubed per second	m^3/s	cubic feet per minute	cfm, ft^3/min
	liters per second	L/s	gallons per minute	gpm
Heat transfer coefficient	watt per square meter per degree Celsius	W/M^2 °C	Btu per hour square foot per degree Fahrenheit	$Btu/h \cdot ft^2$ °F
Length	meter	m	feet	ft
	millimeter	mm	inches	in
Percentage	percent	%	percent	%
Power	kilowatt	kW	watts	W
Pressure	kilopascal	kPa	pounds per square inch	psi, lb/in^2
	kilopascal	kPa	inches of mercury	in Hg
	kilopascal, pascal	kPa, Pa	inches of water	in H_2O
Rotational speed	revolution per second	rev/s	revolutions per minute	rpm
Standard air flow rate	standard cubic meters per second	m^3/s of standard air	standard cubic feet per minute	scfm
Temperature	thermodynamic	°C	thermodynamic	°F
	difference	K	difference	R
Time	seconds	S	seconds	s
	minutes	min	minutes	min
	hours	h	hours	h
Velocity	meters per second	m/s	feet per second	fps, ft/s
	meters per second	m/s	feet per minute	fpm, ft/min
Weight	kilogram	kg	pounds	lb

4.8 Punctuation

Punctuation shall follow conventional usage as set forth in *CMOS.*

4.8.1 Use of Periods with Titles and Headings

Periods shall not be used after the main title of a document, after section titles, after table titles, or at the end of appendix titles.

4.8.2 Use of Periods with Figure Captions

Periods shall not be used at the end of figure captions.

4.8.3 Use of Periods with Abbreviations

Periods shall not be used in abbreviations of units of measure unless the omission of the period can cause confusion (for example, “in.”, not “in”, for “inch”).

4.9 Number Separators in I-P and SI Units

I-P and joint versions of documents shall use US formatting, with commas as separators for thousands and a period for decimal numbers. Numbers less than 10,000 shall not include a separator for the thousands place. See the examples in the following text box.

9000
10,000
98.6

For SI versions of documents, numbers shall be formatted using a European style with a space as a separator for thousands, and comma as decimal. See the examples in the following text box.

9000
10 000
98,6

4.10 Normative and Informative Elements

Normative elements contain information that is required to implement the standard and is therefore necessary to determine conformance with the standard. Informative elements contain information that is not necessary to determine conformance with the standard.

4.10.1 Normative Elements

Information required to implement the standard includes the following:

- The body of a standard including text, figures, tables, and equations.
- Appendices marked “normative”.
- Figures and tables that appear in normative sections are normative unless otherwise specified.

4.10.2 Informative Elements

Information provided for information only includes the following:

- Front matter.
- Notes to text, tables, and figures.
- Appendices marked “informative” for example, Appendix B.
- Figures and tables in informative sections.
- Figures and tables that show examples shall include “example” in the title and be labeled as informative when in normative sections. See the example of an informative figure in a normative section in the following text box.

Figure X Example of Informative Figure in Normative Section (Informative)

4.11 Expressions of Provisions

The user of the document shall be able to identify the *requirements* necessary to claim conformance to a document. The user shall be able to distinguish these *requirements* from other types of *provisions* (*recommendations*, *permissions*, possibilities, and *capabilities*). See Table 6 for where and when to use each *provision*.

Table 6 Expressions of Provisions in Normative and Informative Sections

Type of *Provision* Expressed	Term(s) Used	Normative Sections	Informative Sections and Guidelines	Sections
Requirements	"shall" and "shall not"	Allowed	Not allowed	4.11.1
Recommendations	"should" and "should not"	Allowed in informative notes	Allowed	4.11.2
Permission	"may"	Not allowed	Allowed	4.11.3
Possibility or *capability*	"can" and "cannot"	Allowed	Allowed	4.11.4
External constraints	"must"	Allowed	Allowed	4.11.5

4.11.1 Terms Used to Express Requirements (Shall and Shall Not):

The words "shall" and "shall not" indicate mandatory *requirements* to be strictly followed to conform to the standard and where deviation is not permitted.

"Shall" and "shall not" are used only in normative sections. Informative sections and guidelines shall not include "shall" or "shall not" *requirements*.

"Shall" is the required term that is to be used in place of:

- is to
- is required to
- it is required that
- has to
- only … is permitted
- it is necessary
- must (see Section 4.11.5 for where "must" is used)
- will

"Shall not" is the required term that is to be used in place of:

- is not allowed [permitted] [acceptable] [permissible]
- is required to be not
- is required that … be not
- is not to be
- do not
- may not
- will not

4.11.2 Terms Used to Express Recommendation (Should and Should Not)

"Should" and "should not" are used in normative and informative sections to express *recommendations* rather than *requirements*. When used in normative sections, "should" and "should not" shall appear in explanatory notes. See Section 5.6.

In the negative form, a *recommendation* is the expression that a suggested possible choice or course of action is not preferred but it is not prohibited.

"Should" is required term that is to be used in place of:

- it is recommended that
- ought to

"Should not" is the required term that is to be used in place of:

- it is not recommended that
- ought not to

4.11.3 Terms Used to Express Permission (May)

"May" signifies a *permission* expressed by the document, whereas "can" refers to the ability of a user of the document or to a possibility. "May" is used only in informative sections.

"May" is the required term that is to be used in place of:

- is permitted
- is allowed
- is permissible

Do not use the following in this context:

- "possible" or "impossible"
- "can" instead of "may"
- "might" instead of "may"

Negative *permissions* are ambiguous and should not be used. Rather than using negative *permissions*, either rewrite the sentence to state what is permitted, or rewrite as a *requirement* or *recommendation* not to do something.

4.11.4 Terms Used to Express Possibility or Capability (Can and Cannot)

"Can" is the required term that is to be used in place of:

- be able to
- there is a possibility of
- it is possible to

"Cannot" is the required term that is to be used in place of:

- be unable to
- there is no possibility of
- it is not possible to

Do not use "may" instead of "can" in this context.

"May" signifies a *permission* expressed by the document, whereas "can" refers to the ability of a user of the document or to a possibility (see Section 4.11.3).

4.11.5 Term Used to Express External Constraint (Must)

External constraints are not *requirements* of the document. These are given for the information of the user. (See Section 2.1.2.)

"Must" is the required term and can be used in normative and informative sections.

The word "must" shall not be used when stating mandatory *requirements*; "must" is used only to describe unavoidable situations.

Use of the word "must" does not indicate that the *external constraint* referred to is a *requirement* of the document.

Do not use "must" as an alternative for "shall." This prevents confusion between the *requirements* of a document and *external constraints.*

See the examples of *external constraints* shown in the following text box.

Conditions existing in a country:

1) Because Japan is a seismically active country, all buildings must be earthquake resistant.

A law of nature:

2) All fish must maintain a balance of salt and water in their bodies to stay healthy.

4.12 Vague and Imprecise Words and Phrases

Words and phrases used in AHRI standards and guidelines shall be clear and not subject to misinterpretation. Subjective, unclear, vague, or commonly misinterpreted terms or phrases such as "approximately equal" and "acceptable" shall not be used. Exact words such as stating a tolerance shall be used instead. Words such as "full," "partial," "maximum," and "intermediate" shall be clearly defined when used to prevent misunderstanding.

Vague wording causes problems for the understanding of non-native English speakers, as well as for the translation of the standard or guideline into other languages. See Section 1.11.

The words and phrases listed in Table 7 should not be used in AHRI standards and guidelines. The SWG or STC shall review the document for the presence of the words in Table 7. The SWG or STC shall provide a justification for the use of the words in Table 7 in a standard or guideline.

Table 7 Vague and Imprecise Words and Phrases

acceptable	adequate (ly)	advise	also
and/or	and the like	appreciable	appropriate(ly)
approximate (ly)	aspire	available	avoid (ed)
care	careful (ly)	consider (ed) (ation)	could
chance (on the chance)	desire (ed) (able)	easy (ily)	effectively
e.g.	encourage	ensure	equivalent (ly)
etc.	exception	excess (ive)	familiar
feasible	few	firm (ly)	frequent (ly)
general (ly) (ize)	good	grant	guide (line)
i.e.	imply	infer	in lieu of
insure	it (s)	legible (ly)	light (ly)
like (ly)	many	maybe	might
most (ly)	near (ly)	neat (ly)	no
note	numerous	ought / ought to	normal (ly)
periodic (ally)	possible	practical (ly)	practice
preferred	presume	probable (ly)	properly
ready (ily)	reasonable (ly)	recommend (ation)	request
safe (ly)	satisfactory	secure (ly)	several
significant (ly)	similar	some	substantial (ly)
sufficient (ly)	suitable	suggest (tion)	them
they	typical (ly)	urge	usual (ly)
various	via	vice versa	which
would	—	—	—

4.13 Rounding, Significant Figures, and Precision

Based on the calculations, measuring methods, and technology covered by a standard or guideline, deviations from conventional rounding, significant figure, and precision methods may be needed. All deviations to conventional procedures shall be provided in the standard or guideline. Otherwise, it shall be assumed that the standard or guideline follows conventional methods for rounding, significant figures, and precision.

Section 5. Document Elements

5.1 Section Numbering

The body of a standard is divided into major sections that are further divided into subsections. The body and appendix portions of the document shall be arranged, in order of descending importance, into sections, subsections, paragraphs, and subparagraphs. Sections shall be numbered consecutively by adding a period (.) and an Arabic number after the section number (for example, the sections in Section 4 of a document shall be numbered 4.1, 4.2, 4.3…, with subsections 4.1.1, 4.1.2, 4.1.3…). In appendices, the appendix letter is followed by a number (for example, A.1., A.2., etc.) with subsections following the same format as body sections (for example, A.1.1., A.1.1.1. …).

All sections shall include a title. Sections without a title should instead be paragraphs under the parent heading.

Section and subsection titles are descriptive and shall not contain requirements. Titles should not be longer than one line of text.

Sections containing multiple *requirements* shall be subdivided into subsections, that shall be further subdivided into paragraphs, that shall be further divided into subparagraphs of text.

5.1.1 Headings for Sections, Subsections, Paragraphs, and Subparagraphs

First-level headings (H1) are for a top-level section and have a single number. Second-level headings (H2) used for subsections have two numbers, for example, 2.1 or A.2. Third-level headings (H3) for paragraphs have three numbers, for example, 2.1.2 or A.2.1. Fourth and fifth level headings (H4 and H5, respectively) used for subparagraphs have four and five numbers, for example, 4.1.2.3, 4.1.2.4, and 5.1.2.3.4, 5.1.2.3.5, respectively.

5.1.2 Heading Levels

Heading levels should not exceed the 5th level of headings. For example, the document may contain a subsection numbered 1.2.3.4.5, but not a section 1.2.3.4.5.6.

Any subsection, paragraph, and subparagraph shall have another subsection, paragraph, and subparagraph at that same level. For example, if the document has a 3.2.1 there shall be a 3.2.2.

5.2 Lists

5.2.1 List Placement

Readability and comprehension by the reader are the most important factors for presentation of a list. A list with a small number of items or brief items can be better as a paragraph, but a long paragraph can be better as a list.

Lists within the body of an existing paragraph shall be preceded by introductory text and a colon. Lists shall not appear within the middle of a sentence.

The structure of all items within a list shall be parallel, meaning that the items shall be all single words, all phrases, or all full sentences.

In lists consisting of single words and phrases, the introductory text shall include mandatory language that establishes the *requirement* for the paragraph.

In sentence-style lists, introductory text shall contain mandatory language if each item is not stated as a *requirement*, and each item shall consist of only one sentence. See an example of a list in the following text box.

Standard Ratings for determining either number of rows, Nr, requirements or sensible capacity, qs, for specific job conditions can be obtained by use of the following data:

1) Performance factors as illustrated in Figure 26
2) For *coils with smooth tubes*: f'_{DWL} vs. ReL and jL vs. ReL (Figure 13)
3) For *coils with turbulators* or *internally grooved tubes*: f'_{DWL} vs. ReL and jL vs. ReL in accordance with Section 5.5 (Form 410-7, and Figure 13)
4) Applicable heat transfer equations in Section 6.2.3
5) Manufacturer established single-phase liquid pressure drop of tubeside coil attachments ($\Delta p_{L\,ATT}$)

List format may not be the best choice. For example, when items in a list consist of very long sentences (more than two lines), and the list itself does not require any typographic prominence, the items may be formatted as regular paragraphs or subparagraphs of text, under appropriate heading number as described in Section 5.1.1.

5.2.2 Vertical List Punctuated as a Sentence

Following Section 6.131 of *CMOS*, if items in a vertical list complete a sentence begun in the introductory text, semicolons or commas can be used between line items, and a period shall follow the final item. If the items include internal punctuation, semicolons shall be used. Each item begins with a lowercased letter, even if the list is a numbered list. The conjunction "and" or "or" shall be used before the last item.

5.2.3 Use of Ordered vs Unordered Lists

Use of an ordered (numbered) list indicates that the items are performed in ordered steps, or that items follow a precedence. An unordered (bullet) list implies that all items in the list are of the same precedence or can be performed in any order.

In cases when a particular item may need to be referred to a numbered list should be used so that the reader can be referred to for example, "4.3.2 (1)" rather than to an unnumbered item for example, "the third item in the list under Section 4.3.2".

Subsection numbers shall not be used for list items, as each subsections requires a title (see Section 5.1).

5.2.4 Style of List Items

The language of items within a list shall be parallel — that is, the items shall all be single words, all phrases, or all full sentences; and all introduced by a noun or all by a verb.

In lists of items consisting of single words and phrases, the introductory text shall include mandatory language that establishes the *requirement* for the paragraph.

In sentence-style lists, introductory text shall contain mandatory language if each item is not stated as a *requirement*. In sentence-style lists, each item shall consist of only one sentence.

5.2.5 Numbering

Main lists shall be a grouping of listed items within a numbered or lettered section.

Sublists shall be a grouping of listed items within a main list item.

Sub-sublist shall be a grouping of listed items within a sublist item. A third level of a sublist is allowed but discouraged.

The hierarchy for numbering and lettering listed items shall be as shown in the following text box.

1) Main list item
   a) Sublist item
   b) Sublist item
      i) Sub-sublist item
      ii) Sub-sublist item
2) Main list item

5.3 Figures

All figures shall be numbered sequentially throughout the body of the document (Figure 1, Figure 2, Figure 3…) and referenced within the appropriate section, subsection, or paragraph of text above where the figure appears in the document. Figures in appendices shall continue the sequential numbering from the body of the document. They shall not include the appendix number (Figure 1, Figure 2, Figure 3…).

Figures in the main text of the document shall portray mandatory *requirements*. Figures in normative sections are normative unless otherwise specified as informative in the title of the figure.

Drawings, charts, or graphs used to illustrate an example or a common situation and not a mandatory *requirement* shall be placed in an informative appendix.

5.3.1 Preparation

Drawings, charts, and graphs shall be prepared by AHRI staff or contractors from drawings submitted by the technical committee.

5.3.2 Identification

Each drawing, chart, or graph shall be identified by a figure designation and a unique caption.

All figures shall be referenced in the text.

The caption of the figure shall appear below the figure. See an example of a figure and the figure's caption in the following text box:

The quantities $\dot{q}(t_i)$ and $E(t_i)$ are calculated for each individual Temperature Bin using the appropriate formula for each bin depending on the operating characteristics of the system. When the building load is less than low stage capacity use Section 11.2.1.2.1. When the building load is greater than the low stage capacity, but less than the high stage capacity, either Section 11.2.1.2.2 or is used, depending on the operating characteristics of the system. See Figure 3 for a graphical representation.

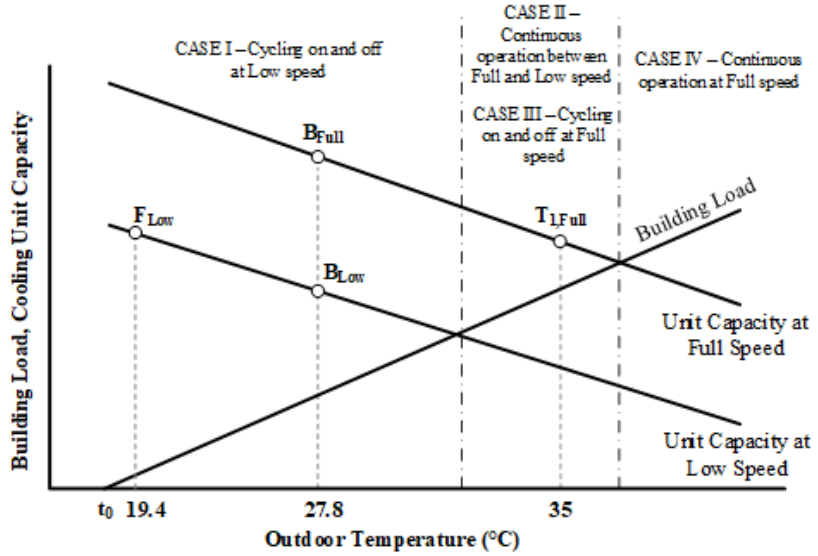


Figure 3 Two-speed System Operation in the Cooling Mode – T1 Climate

5.3.3 Figure Position in Text

When used in the text, a figure shall be centered and placed as close to the first reference in the text as convenient.

5.3.4 Figure Titles

Figure titles are descriptive and shall not contain requirements. Figure titles should not be longer than one line of text.

Figure titles shall be textual elements, rather than part of the figure's graphic file.

All significant elements in a figure shall be labeled with terminology that matches the text discussion. See Section 5.3.

Figure titles shall appear centered below the figure.

Units of measure used in figure labels shall be abbreviated.

Symbols in complex figures shall be identified in a legend or note.

Photos and artwork obtained from outside sources shall be identified by a credit line in parentheses following the caption. See Section 6.

5.4 Tables

All tables shall be numbered sequentially throughout the body of the document and the document's appendices (Table 1, Table 2, Table 3…) and referenced within the appropriate section, subsection, or paragraph of text above where the table appears in the document.

Alternating shaded rows may be used for readability in tables with numerous rows. Shading shall not interfere with the legibility of the text.

5.4.1 Table Title

Each table shall be identified by a consecutive number and a unique title, and table titles shall appear centered at the top of the table.

Table titles are descriptive and shall not contain requirements. Table titles should not be longer than one line of text.

The first letter of each word in a table title shall be capitalized.

In a table title, a preposition of four letters or less, an article, or a coordinating conjunction shall be lowercased unless it is the first word.

5.4.2 Column Headings

The first letter of each word in a column heading shall be capitalized.

In a column heading, a preposition of four letters or less, an article, or a coordinating conjunction shall be lowercased unless it is the first word.

Abbreviated units of measure in column headings shall be enclosed in parentheses.

The first letter of every word in column sub-headings shall be capitalized, except that abbreviated units are capitalized as appropriate.

5.4.3 Column Entries

Only the first letter of the first word of individual table entries shall be capitalized.

5.4.4 Abbreviations and Letter Symbols

Abbreviations and letter symbols for units, when the intent and meaning are clear, shall be permitted to be used in headings and in the body of the table.

5.4.5 Units of Measure

Units of measure shall be given in the title, column headings, or table note as needed.

When the same unit of measure is used throughout a column, the unit of measure shall be given in the column heading instead of the column itself.

When a column contains more than one unit of measure, then the units of measure shall be used in the column and not in the column heading.

Units of measure shall be abbreviated in tables.

5.4.6 Empty Cells

An em dash (—) shall be used to indicate an empty cell.

5.4.7 Numerical Columns

Tabular material should be centered in each column for columns with inclusive numbers and entries in mixed word/number columns.

Numbers should be aligned on the decimal point, and zeroes should be placed before the decimal point in numbers less than one.

Decimal indications should be used in tabular work unless fractions are commonly used in the field.

5.4.8 Textual Columns

Textual columns (columns where only words appear) shall be aligned on the left.

Runover lines shall be indented under the first line.

All entries of a reading column shall be grammatically parallel.

A concluding period shall not be used unless the entry is one or more complete sentences.

5.4.9 Breaking

Tables should fit vertically on a page, but landscape orientation is allowed if necessary.

When a table carries over for more than one page, the heading shall repeat on successive pages, and column headings shall be repeated on each page.

5.4.10 Table Notes

Table notes are informative and may be used for explanation of information found in a table. Table notes shall appear directly beneath the table.

Table notes should be sequentially numbered in the table based on reading across a row and then down rows.

Table note(s) shall be indicated using the word “Note(s)” with a colon (“Note(s):”), followed by consecutively numbered text notes.

Table notes shall be included in the last/bottom row of a table. See the example of a table with notes inside a table row in the following text box.

Table 7 Tolerances

Measurement	Test Operating Tolerance	Test Condition Tolerance
Air dry-bulb temperature (°F): Entering Leaving	 2.0 2.0 / 3.0[1]	 0.5 —
Air wet-bulb temperature (°F): Entering Leaving	 1.0 1.0	 0.3[2] —
Liquid entering temperature (°F):	0.5	0.2
Saturated refrigerant temperature corresponding to the measured *indoor side* pressure[3] (°F)	3.0	0.5
Liquid refrigerant temperature[3] (°F)	0.5	0.2
Air ESP for integral fan (in H_2O)	0.05	See Section 5.7 and Section 5.8
Liquid ESP for integral pump (psi)	−0.0/+1.0	1.0
Electrical voltage (percent of reading)	2.0	1.0
Electrical Frequency (Hz)[4]	0.4	0.2
Liquid flow rate (percent of reading)	2.0	See Section 5.4.15
Nozzle pressure drop (percent of reading)	2.0	—

Notes:
1. The test operating tolerance is 2.0 °F for cooling tests and 3.0 °F for heating tests.
2. Applicable only for cooling tests.
3. Tolerance applies only for the compressor calibration and refrigerant enthalpy methods.
4. When using electrical generators, tolerances can be doubled.

Table notes applying to the entire table shall appear as bulleted items preceding the numbered notes. Notes that apply to a specific section of a table shall be numbered. See the example of a table with numbers and bullet notes outside of table cell in the following text box.

Table 3 Example Table with Different Notes

	Example Category A	Example Category B
Example Type 1	ABC1	XYZ1
Example Type 2 [1,2]	Note 3	XYZ2
Example Type 3	ABC3	XYZ3
Example Type 4	ABC4	XYZ4
Example Type 5	ABC5	XYZ5[4]
Example Type 6	ABC6	XYZ6
Example Type 7	ABC7	XYZ7
Example Type 8	ABC8	XYZ8

Notes:
- Example a first note that applies to entire table
- Example a second note that applies to entire table

1. Example note that applies to Note 1 (superscript) in the table.
2. Example note that applies to Note 2 (superscript) in the table.
3. Example note that applies to Note 3 in the table.
4. Example note that applies to Note 4 (superscript) in the table.

5.5 Equations

Equations shall be numbered sequentially throughout the body and appendices of the document (1, 2, 3…) and referenced within the appropriate section, subsection, or paragraph of text. The reference shall appear above where the equation in the document.

Equation numbers shall be formatted as bold and shall appear to the right of the equation and be aligned with the right margin. Equations should align with the paragraph above unless an equation needs to be out-dented to prevent line-wrapping. The “Where” *statement* and variables shall be indented once. See the example equation in the following text box.

5.2.3 **Calculation of FEC**

The FEC shall be measured data for all fan motors or calculated data using the motor efficiency. See Equation 3:

$$FEC = (P_f \cdot t_f) / (1000) \quad (3)$$

Where:

P_f = $(P_{fi} \cdot n)$ (measured)

P_f = $(P_{fo} \cdot n) / (hm)$ (calculated)

Equations do not have titles, and do not appear in the table of contents.

Constants and variables shall be defined in the section of the text where the equation appears, but not more than once in a subsection.

Informative explanatory information, including how an equation is derived, shall be in an appendix.

An informative example of the equation, with example numbers replacing constants, can follow the equation. The example must be identified as informative, with a reference to the base equation and an explanation of what the equation is demonstrating. While the base equation is numbered, the example is not. See an example of an informative, unnumbered equation in the following text box.

Once the degradation factor is calculated the rating point EER can be calculated using Equation 3 for the rating point C.

$$EER = \frac{LF \cdot Q}{LF \cdot [C_D \cdot (P_C + P_{CD})] + P_{IF} + P_{CT}} = \frac{0.938 \cdot 45{,}394}{0.744 \cdot [1.033 \cdot (2{,}835 + 450)] + 560 + 100} = 10.6 \text{ (Btu/h)/W}$$

Similar degradation corrections are also made for the 25 Percent Load points.

Informative explanatory information, including how an equation is derived, should be in an appendix.

Following Section 12.45 of *CMOS*, fractions shall be set in text with a slash to separate the numerator and the denominator: 1/2, 2/3, 1/10, 97/100. Common numerical fractions may be set as case fractions (text-sized fractions with a horizontal bar). Examples of case fractions are shown in the following text box.

$\frac{1}{2}, \frac{2}{3}, \frac{1}{10}$

5.6 Explanatory Information (Notes)

Notes are used for giving additional information intended to assist the understanding or use of the text of the document. Notes are informative.

The document shall be usable without the notes.

See the example of a note in the following text box.

Note: For the purpose of this standard, the terms “equipment” and “systems” are used throughout to mean multi-split air-conditioners or multi-split heat pumps, or both unless otherwise specified.

5.7 Cross-References

5.7.1 Cross-References to Other Sections

Cross-references to other sections within the document shall be specific and relevant and shall be placed where relevant.

A cross-reference to a section or appendix shall include the word “Section” or “Appendix” as appropriate, as illustrated in the following text box.

In the case of a *modulating compressor*, the *published rating* is a set of *individual published ratings* at unique steps. The number of unique steps to comprise each set of *published ratings* is specified in Section 5.3.

6.4 Ratings

Standard ratings for capacity, EER2, SEER2, HSPF2 or $P_{w,OFF}$ shall be based either on test data or computer simulation. For three-phase systems refer to Appendix G.

Do not include "of this standard" or "of this guideline" or "of this appendix" with a cross-reference to a section, subsection, or appendix that appears in the standard/guideline/ stand-alone appendix.

5.7.2 Cross-References to Figures and Tables

Cross-references to figures and tables shall be made using the applicable number prefaced by the word "Figure" or "Table." See an example of a cross-reference to a figure in the following text box.

The operation of units with single capacity compressors is illustrated in Figure 1. The total walk-in system heat loads…

When cross-reference is made to two or more figures or tables, the word "Figure" or "Table" shall be repeated before each number, for example, "Table 4 and Table 5".

When cross-reference is made to a range of figures or tables, the word "Figure" or "Table" shall be repeated before each number in the range, for example, "Figure 4 through Figure 8".

5.7.3 Unnecessary Cross-References

Cross-references shall not be used where additional words can serve the same purpose.

5.8 References to Other Documents and Sources

A normative reference makes a reference to another document, for example, "see Table 7 of ASHRAE 5432." This reference is comparable to a hyperlink on a web page; content is referred to but not included.

When referring to a standard, include only the organization and document number, assuming the latest edition of document. In all cases, the full citation of the document shall be added to A or Appendix B. If a reference appears in a normative section of a standard, the full citation appears in Appendix A. If a reference appears in an informative section of a standard, the full citation shall appear in Appendix B. The referenced content should be accessible (publicly available) to the reader of the standard.

If the content of the target document is not conveniently accessible, for example, if a copy of the standard must be purchased, the committee can decide to copy the content into the standard; this requires written *permission* from the content owner. The committee is responsible for confirming that the copied content remains applicable, current, and valid, and updates the included text in future revisions of the standard. *Permission* shall be obtained from the content owner to reproduce copyrighted content in current and future editions of a document. See Section 6.1.

The following rules shall apply to references to publications in the text of a document:

1) References to publications in the text shall be for the purpose of supplementing *requirements*, *recommendations*, and guidance (as in guidelines).
2) In standards, only mandatory references shall appear in the text of the document.
3) Bibliographical and informative references shall not be included in the text of a document but only in explanatory material, such as in an informative appendix.

5.8.1 References to Books, Reports, and Articles in Periodicals

All references to books shall be made using the author-date method of citation (for example, the author's last name, or publishing organization if an author is not given, and the year of publication enclosed in parentheses at the end of a sentence).

5.8.2 Reference Lists in Appendices

References shall be listed alphabetically and shall include the location of the organizations cited. References to other standards and guidelines shall include the specific date or edition of the document.

5.8.3 Printed Material (Including Standards, Books, and Journals)

The style for citations of books, reports, and periodicals shall conform to *CMOS.*

Style manuals do not mention how to cite standards consistently, but standards should be treated to the same as a book, journal, or book series depending on the situation. Section 14.220 of *CMOS* states that "[d]ata on author and publisher may not fit the pattern, but necessary information should be given to identify the document." If a standard is published within a journal or other book series, cite the standard the same as a journal article or a book chapter.

Provide enough information so that anyone interested in further information can track down the original document. Citations should indicate that a standard is being referenced, the issuing agency (or publication name), standard designation, and standard title (at a minimum). A publication date is needed if it is not obvious from the standard designation.

A specific standard can be reprinted, altered, or reissued by different standards organizations. The specific version used shall be cited. For example, API 2543 was issued as ANSI Z11.172-1965 and ASTM D1086-1964. Different versions retain the original pagination and others have completely different pagination. When quoting from a page in the standard the only way for someone to find that specific quoted data is with the version of the standard used.

Standards that have addenda or that have been reaffirmed shall have the year of the addenda or reaffirmation listed as the publication year in the reference.

See examples of printed materials formatted and listed in order in the following text box.

AHRI Standard 110-2016, *Air-Conditioning and Refrigerating Equipment Nameplate Voltages*, 2016, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

AHRI Standard 210/240-2017 (I-P), *Performance Rating of Unitary Air-conditioning & Air-source Heat Pump Equipment (with Addendum 1)*, 2019, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

AHRI Standard 910-2014 (R2023) (I-P), *Performance Rating of Indoor Pool Dehumidifiers*, 2023, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

ASHRAE Handbook of Refrigeration, Chapter 49, Codes and Standards, 2006, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, USA.

Palmatier, E.P. *Construction of the Normal Temperature ASHRAE Psychrometric Chart, ASHRAE Journal*, Vol. 5, 2001, pp 55, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, USA.

5.8.4 Web Pages and Websites

The style for citations of web pages and websites shall conform to Section 14.207 of *CMOS*. To cite original website content, include as much of the following as can be determined:

- title or description of the specific page
- title or description of the site as a whole
- owner or sponsor of the site
- publication date or date of revision or modification (if no such date can be determined, include an access date)
- URL

The word *website* (or *web page*) may be added in parentheses after the title or description of the site if the nature of the source is otherwise unclear. The access date shall be prior to the ballot for public review. Such dates, together with the URL, give the reader the ability to find the information through the internet archive or other means. At the same time, authors should retain a copy of any source that can change or disappear.

See the example of a reference to a website in the following text box.

> "Privacy Policy," Privacy & Terms, Google, last modified July 1, 2021, https://www.google.com/policies/privacy/.

If a site ceases to exist before publication, or if the information cited is modified or deleted, this information should be included in the text or the note.

See the example of a reference to a website without a published or revision date, using an access date instead, in the following text box.

> ASHRAE Terminology. ASHRAE. Accessed [Month Day, Year]. https://www.ashrae.org/technical-resources/free-resources/ashrae-terminology.

5.9 Letter Symbols and Variables

Letter symbols and variables shall be printed in italics. When subscript or superscript, a letter symbol or variable shall be italicized.

The intent of the subscripts shall be made clear in a "where" list.

To express angle dimensions, the degree sign preceded by a number shall be used.

To express temperature on the temperature scales Celsius (C), Fahrenheit (F), and Rankin (R), the degree symbol shall be used with the appropriate letter symbol, for example, 69°C is the abbreviation to indicate 69 degrees Celsius. The degree symbol shall not be used in the absolute temperature scale of kelvin (K). See Section 4.7 for examples of formatting temperatures.

Section 6. Copyright and Permissions

6.1 Copyright Law

Copyright is the right and ability of the owner to prevent others from copying a work as defined by the US Copyright Act of 1976. Unauthorized use by a third party of any exclusive rights of copyright holder, meaning copying, is copyright infringement. A court may issue an injunction and award actual and statutory damages.

Standards created by AHRI as well as other organizations are protected by copyright. Written *permission* is required to make or distribute copies, or to include copyrighted content in our standards and guidelines. This applies to other publications such as web pages, reports, and presentations. Copyright *permission* may require a license fee.

Distributing copies of copyrighted work, even for research or FYI purposes, is NOT allowed. "Fair use" does not cover the inclusion of copyrighted content in AHRI publications.

Copyrighted work or their copies shall NOT be placed on a server or for example, AHRI Connect for members of a committee to access.

If a committee needs to consult content owned by another organization, the EA should arrange for one of the following:

1) purchase enough copies of the document for all members of the committee
2) find one member of the committee who owns a legal copy and appoint that person to research and "speak for" the contents of the document
3) get written *permission* from the copyright holder to distribute copies. See Section 6.2

6.2 Permission for Use

AHRI shall have written *permission* from the owner of content before including content from another organization's documents in AHRI publications, or for distributing copies of a document to members of a committee.

Content shall be correctly attributed regarding source document and ownership, together with a *statement* that AHRI has *permission* to reproduce the content. A credit line within the text and a reference citation in the appropriate appendix shall be provided to acknowledge the owner/copyright holder of the material.

The AHRI staff liaison shall be responsible for obtaining written *permission* for use of materials from other organizations. When asking the owner of the document/content for written *permission*, be specific and list exactly the documents that are intended for distribution and to whom the document/content shall be distributed or indicate the tables, figures, and clauses that are to be copied into a specific document.

The STC should maintain the incorporated content by checking for revisions by the content's owner whenever the AHRI standard is updated. *Permission* shall be obtained from the content owner to reproduce copyrighted content in current and future editions of a document. See Section 6.1.

Section 7. Units of Measure in AHRI Standards and Guidelines

7.1 Units of Measure in AHRI Standards and Guidelines

All AHRI publications shall be based on hard, rational SI units of measure. Publications with I-P units of measure should be developed based on market need. All AHRI publications shall follow one of single SI, dual, or joint for the use of units of measure. The selected method shall be specified in the project charter of the publication. See Section 3.3 of the *AHRI Policy & Procedures for the Development of Standards*.

7.1.1 Single SI

Publish a document that uses SI units of measure only. There is not a companion publication that uses I-P units of measure.

7.1.2 Dual

Publish two separate documents that use a substitution as described in Section 7.2.1 to go between a document that uses SI units of measure and one that uses I-P units of measure. The content of the two publications shall be equivalent. Differences between the two documents, other than differences between the units of measure, shall be noted.

7.1.3 Joint

Publish a single document using both SI and I-P units of measure. A conversion of SI units of measure to I-P units of measure shall be conducted as specified in Section 7.2.2. Documents shall have SI units appear before I-P units to match the format of the units in the title "(SI/I-P)" unless the STC determines that I-P units should appear before SI units in the document. The units in the title of the document "(SI/I-P)" shall not change if I-P units appear before SI units in the document.

7.2 Unit Conversions

One of the following conversion methods as described in Section 7.2.1 and Section 7.2.2 shall be used when selecting the values to publish in I-P units of measure. Appendix F includes the AHRI policy on units of measurements in AHRI Standards and a link to the ASHRAE SI Guide Conversion Spreadsheet.

7.2.1 Substitution

A substitution is an approximate replacement from one set of units to another that uses rational, whole numbers in both sets of units. Use the original value as a guide in selecting a logical value in the alternative units. Hard conversion measurement values are not equal between units of measure.

Examples of substitution:

- replacing 100 yards with 100 meters, or three feet with one meter
- replacing 70°F with 20°C

7.2.2 Conversion

A conversion is an exact conversion from one set of units to another by multiplying the original value by a factor and then rounding so that the new value implies the same accuracy as the original value. The same number of significant figures should be used with both sets of units unless the STC determines otherwise.

Examples of conversion:

- replacing 100.0 meters with 109.4 yards
- replacing 22.0°C with 71.6°F

Section 8. Interpretations

8.1 Interpretations Format and Numbering

Interpretations shall be titled: "Interpretation to [Standard designation-year (units)] – [number]." If a revised standard or guideline incorporating the interpretation is published, the interpretation may be withdrawn.

Interpretations shall be numbered based on the order received.

The next line shall be followed by the title of the standard, and the date the interpretation was approved below.

The body of the interpretation shall include the question, reference, and answer.

Consistent with AHRI standards and guidelines, interpretations shall not reference AHRI's certification programs.

See an example of the interpretation format in the following text box.

INTERPRETATION TO AHRI STANDARDS 550/590 – 2020 (I-P) AND 551/591 – 2020 (SI) – 1

PERFORMANCE RATING OF WATER-CHILLING AND HEAT PUMP WATER-HEATING PACKAGES USING THE VAPOR COMPRESSION CYCLE

Date Approved: 13 July 2021

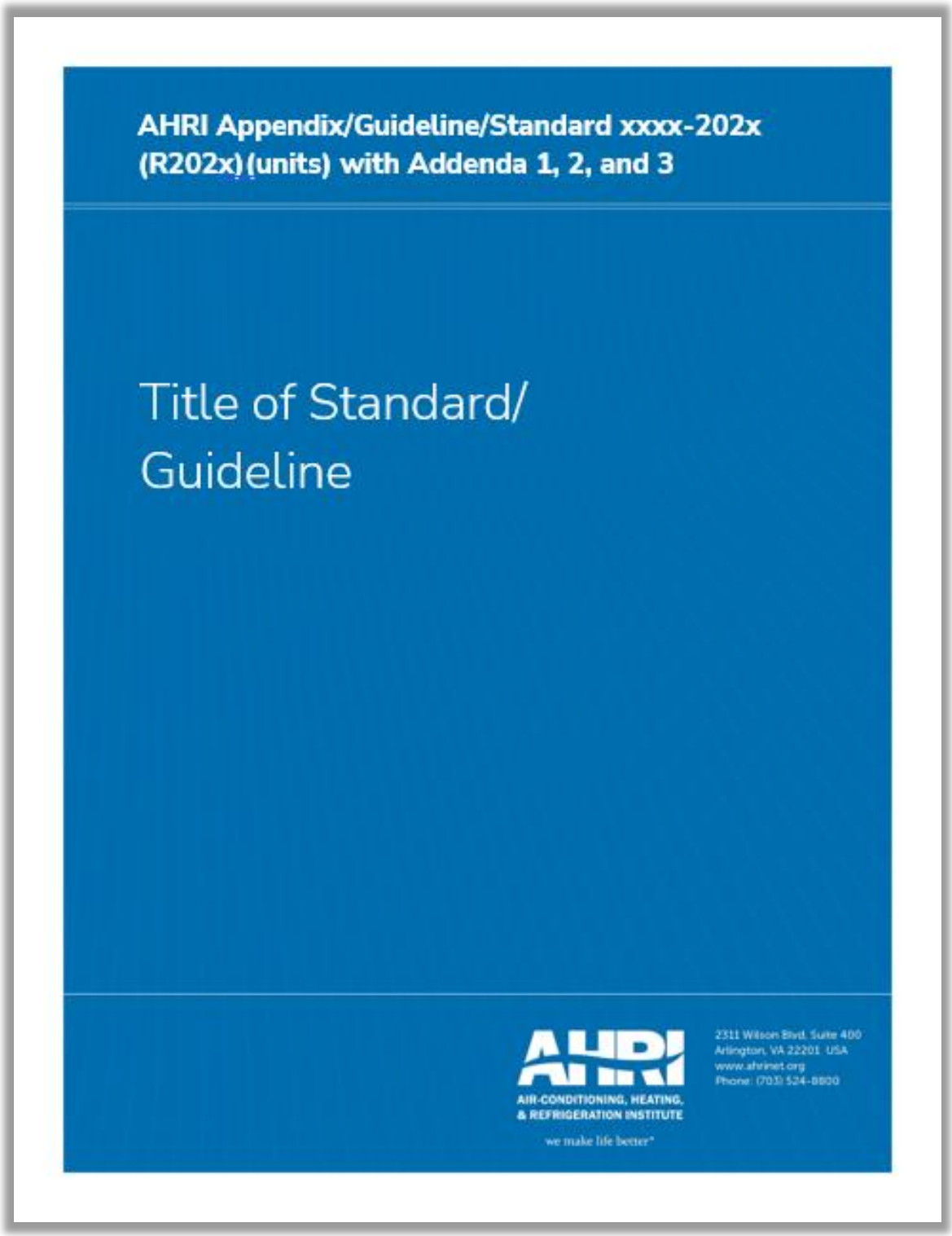
Question: Are refrigerant tubing lengths to be expressed in linear or equivalent units?

References: Table 8 Published Values, and Section 5.9 Refrigerant Tubing for Remote Condenser and Evaporator

Answer: Refrigerant tubing lengths shall be expressed in equivalent lengths. Equivalent lengths shall be calculated in accordance with Table 16 of the 2018 ASHRAE Refrigeration Handbook.

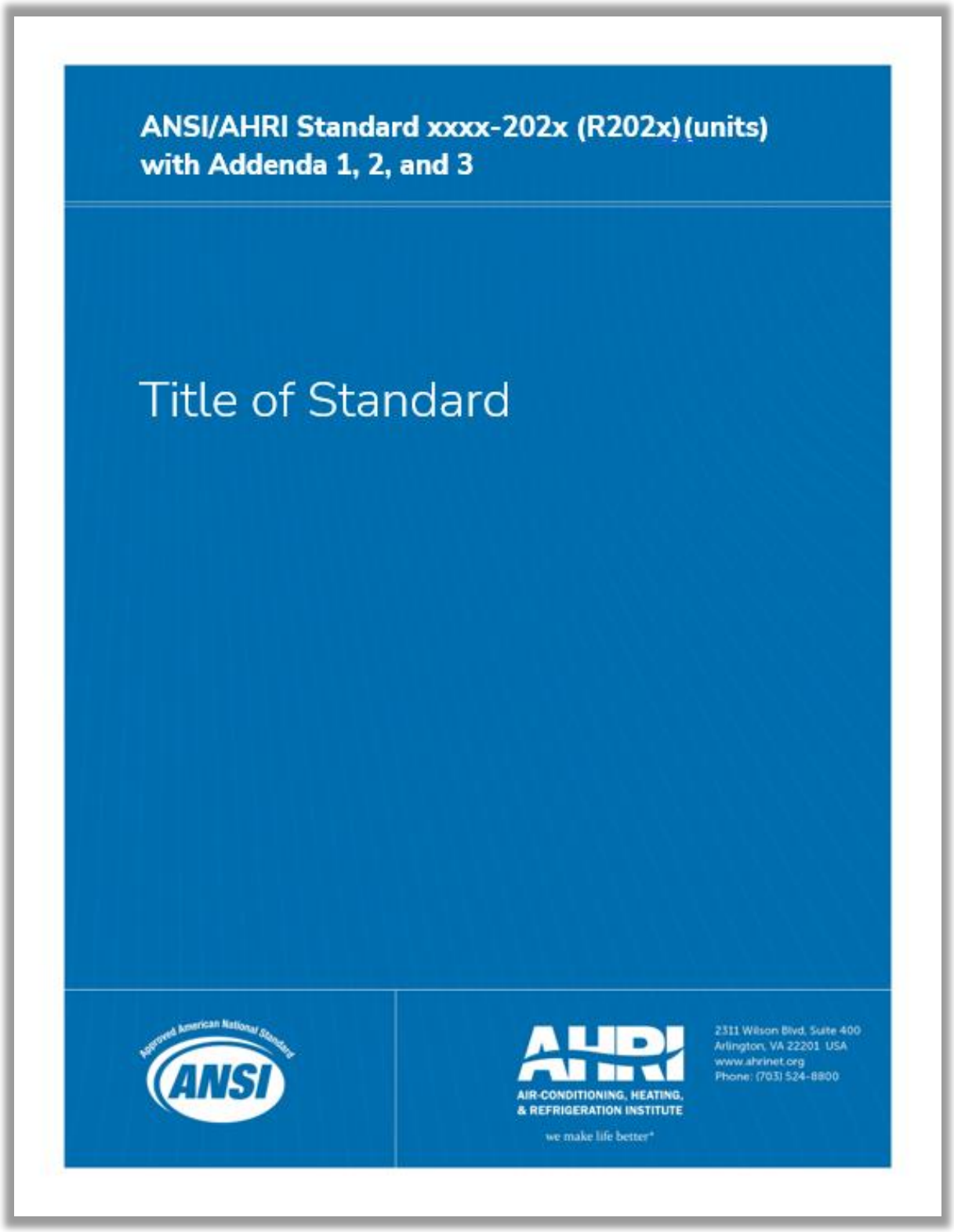
APPENDIX A. EXAMPLES OF COVER PAGES

A.1. Example Cover Page for AHRI Standards, Guidelines, and Stand-alone Appendices.



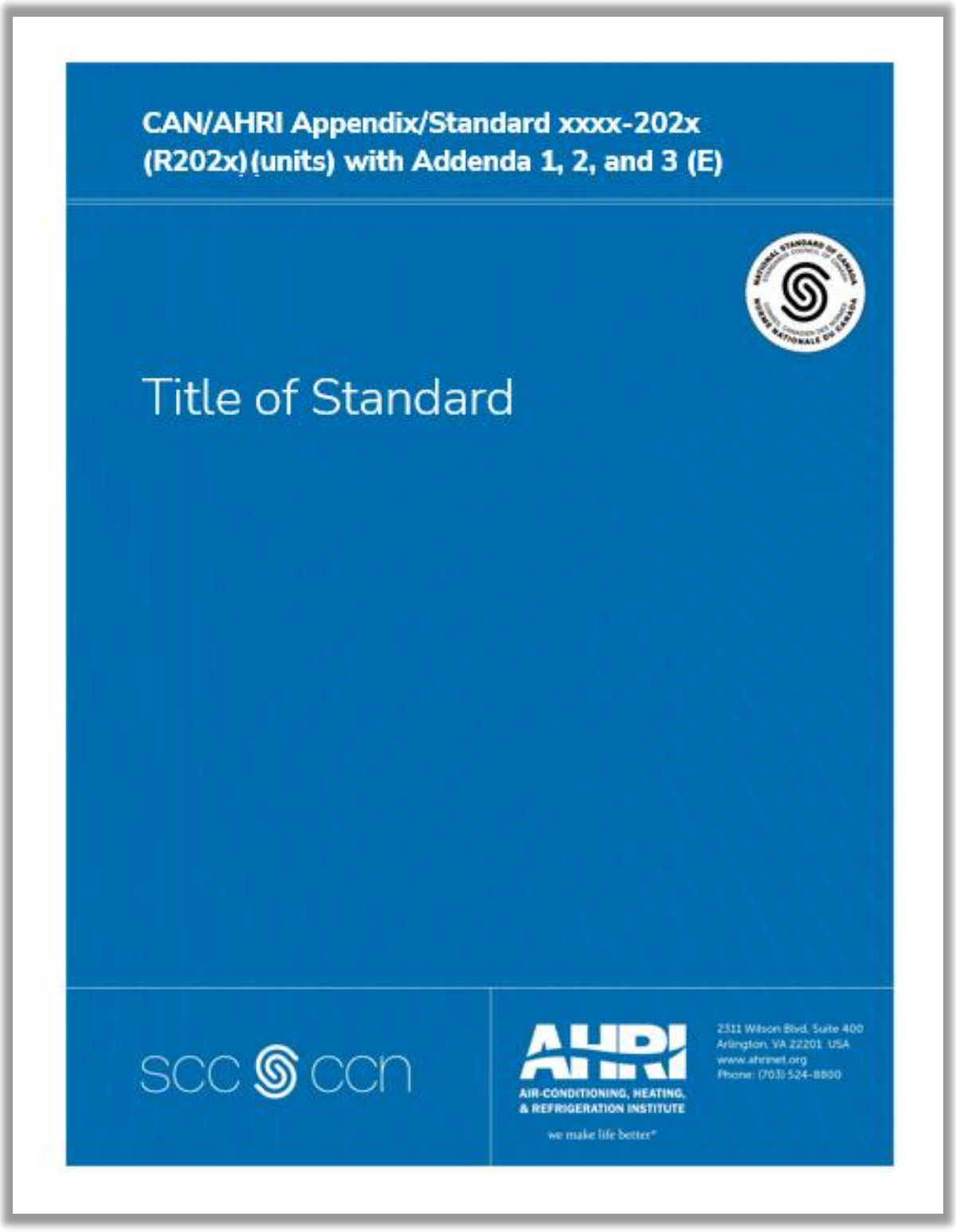
A.2. Example Cover Page for AHRI Standards with the ANSI Logo

See Section 3.4.2.



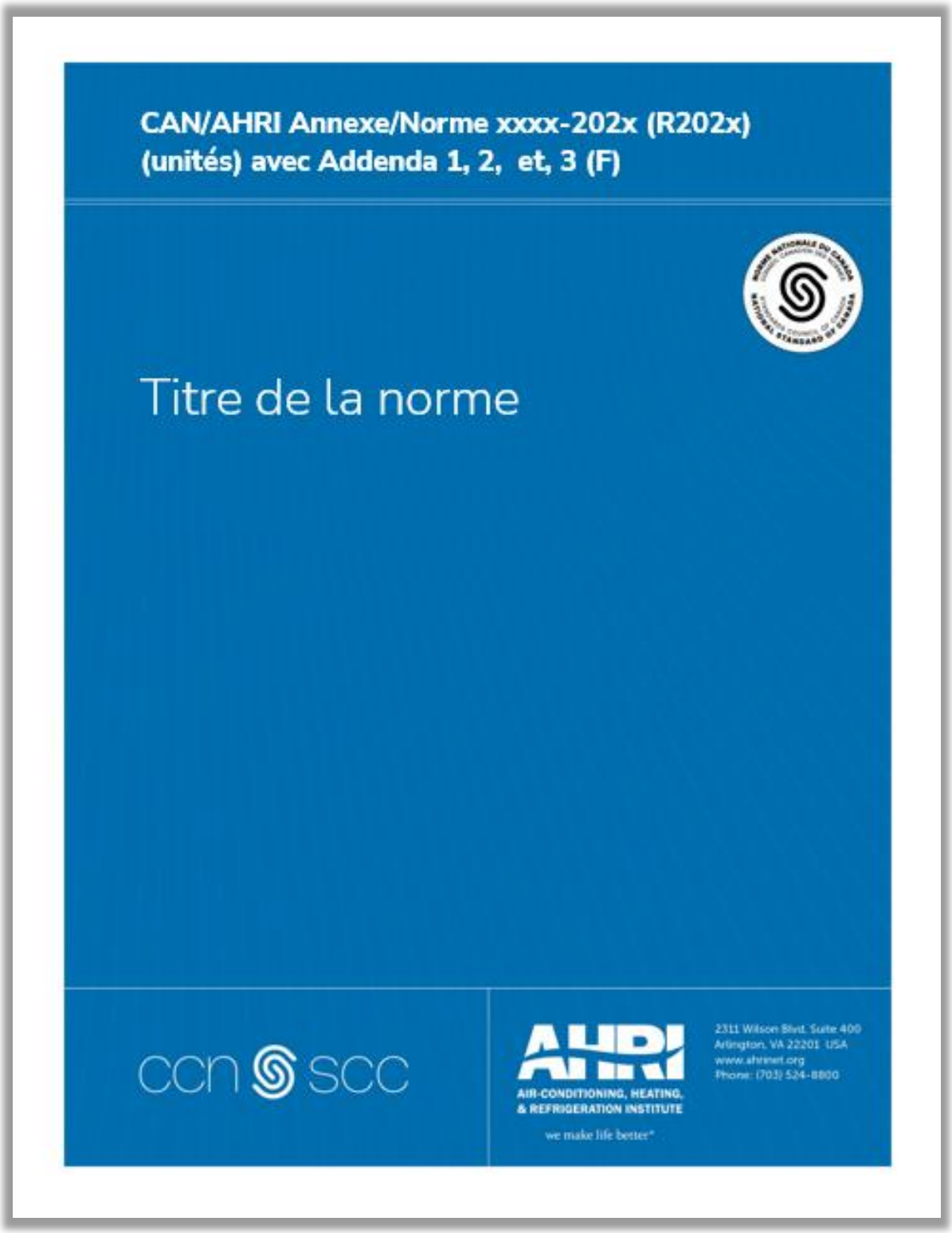
A.3. Example of Cover Page for AHRI Standards or Stand-alone Appendices with the Bilignual English First SCC Logo and Biligual English First NSC Logo

See Section 3.4.3.



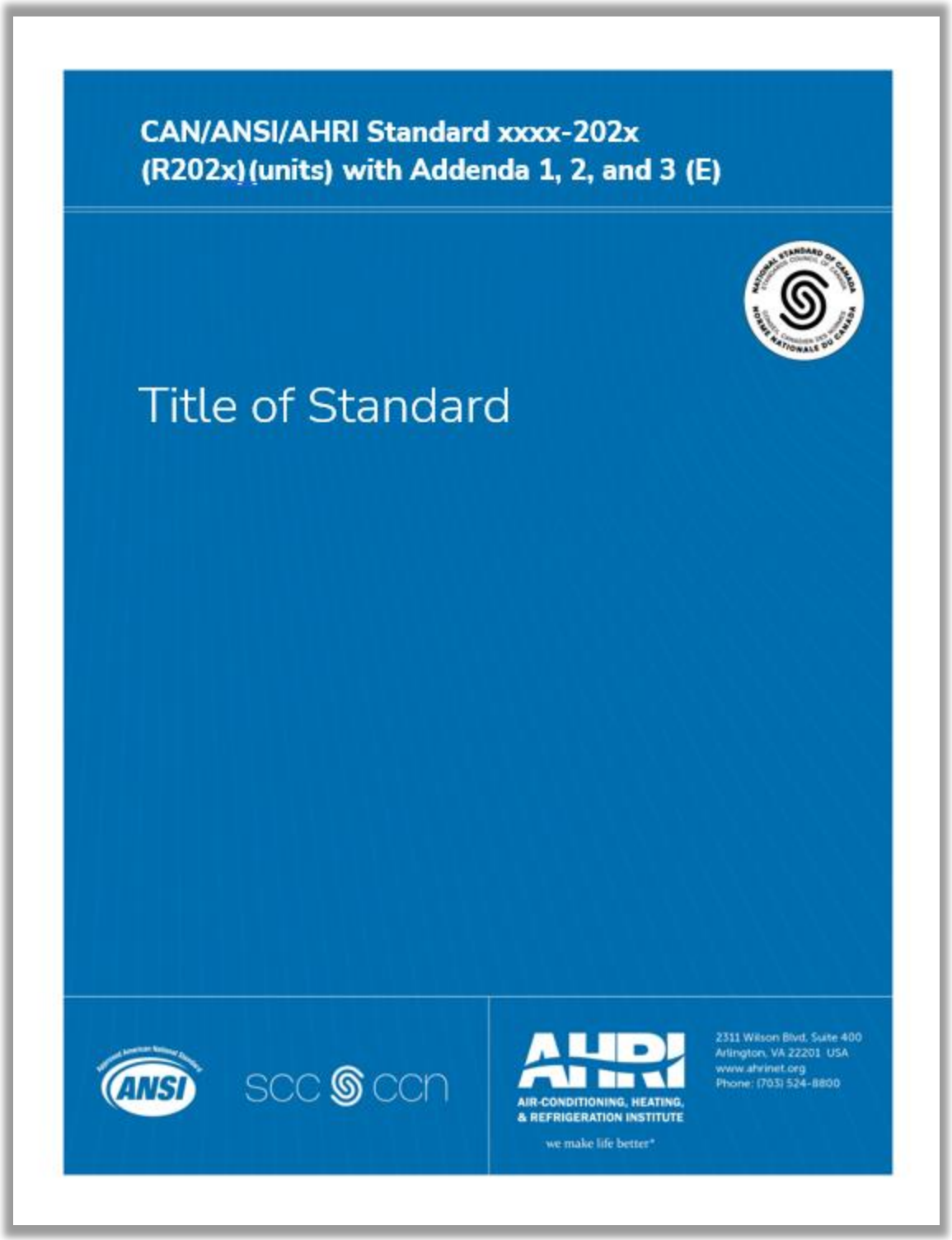
A.4. Example of Cover Page for AHRI Standards and Stand-alone Appendices with the Bilingual French First SCC Logo and Biligual French First NSC Logo

See Section 3.4.3.



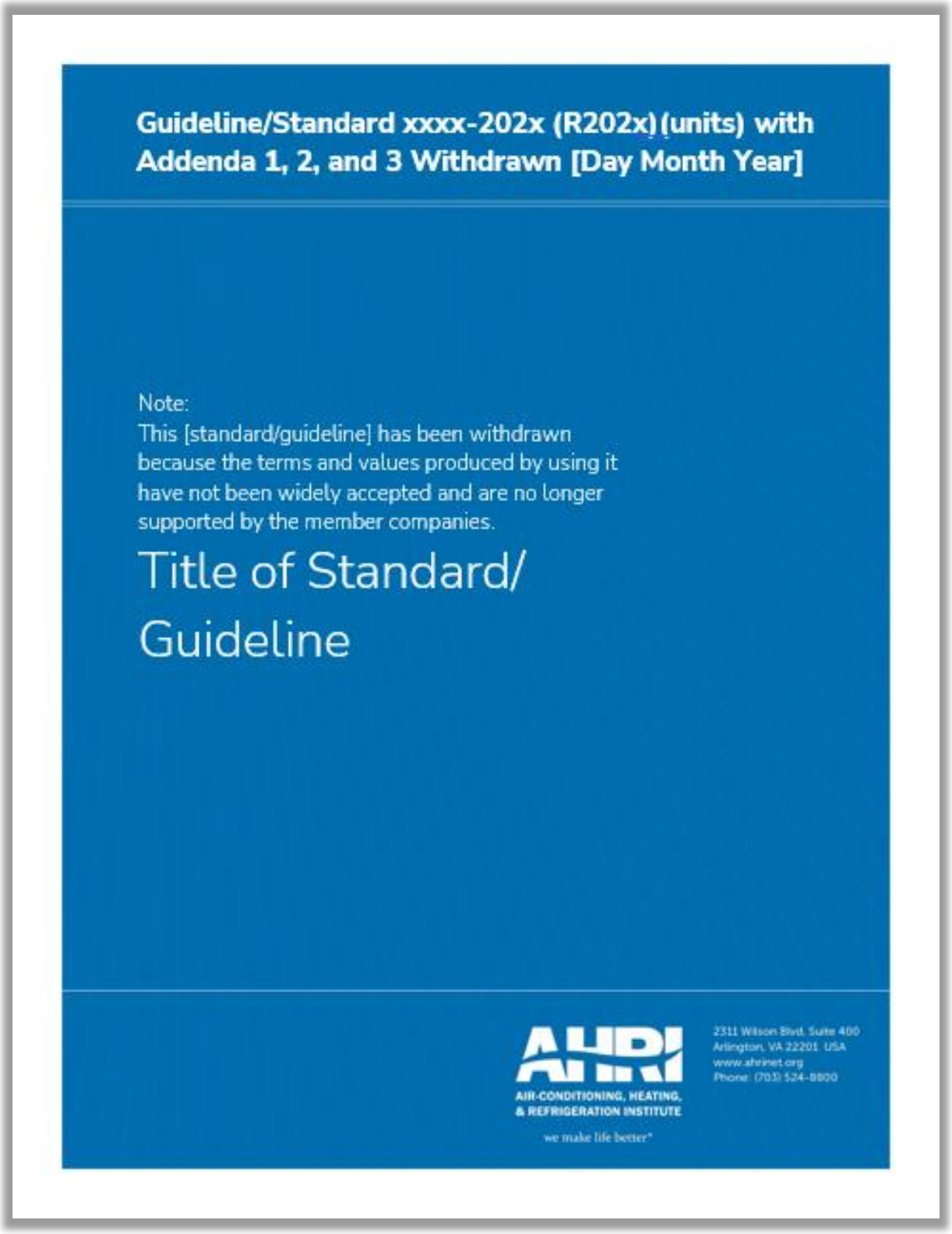
A.5. Example of Cover Page for AHRI Standards with the ANSI Logo, Bilignual English First SCC Logo, and Biligual English First NSC Logo

The ANSI logo shall not be used on standards printed in any language other than English. There is not an example cover page for CAN/ANSI/AHRI standards in French. See Section 3.4.2 and Section 3.4.3.



A.6. Example Cover Page for a Withdrawn Standard, Guideline, or Stand-alone Appendix

See Section 3.4.17.

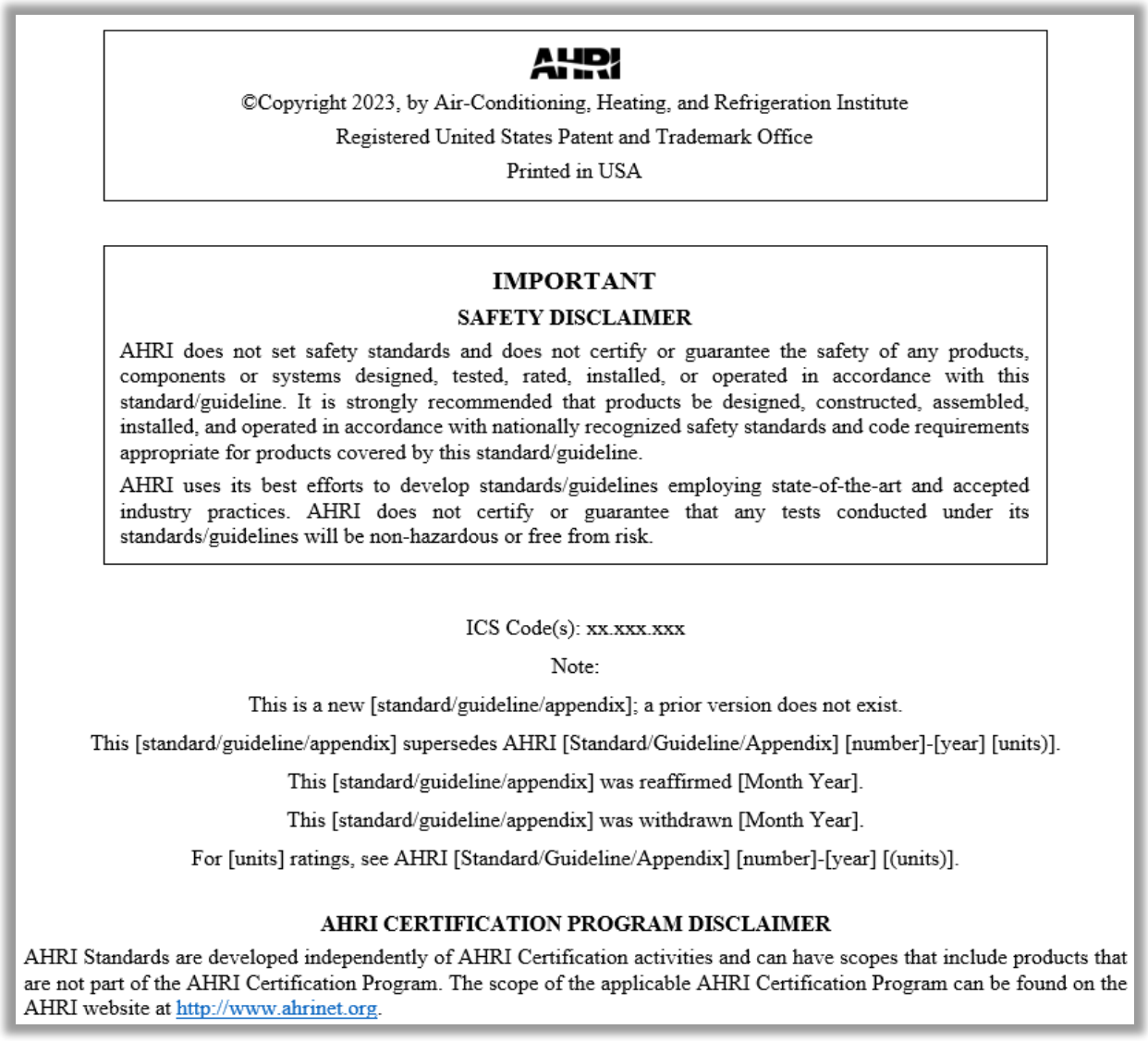


APPENDIX B. EXAMPLES OF FRONT MATTER

B.1. Example of Front Matter First Page After Cover Page

The following is an example of the first page after the cover page that includes:

- AHRI copyright *statement*, see Section 3.4.4
- AHRI Safety Disclaimer *statement*, see Section 3.4.5
- ICS Code, see Section 3.4.6
- Supersedure note, see Section 3.4.7
- Dual standard reference note, see Section 3.4.8
- AHRI Certification Program Disclaimer, see Section 3.4.9



AHRI

IMPORTANT

SAFETY DISCLAIMER

AHRI does not set safety standards and does not certify or guarantee the safety of any products, components or systems designed, tested, rated, installed, or operated in accordance with this standard/guideline. It is strongly recommended that products be designed, constructed, assembled, installed, and operated in accordance with nationally recognized safety standards and code requirements appropriate for products covered by this standard/guideline.

AHRI uses its best efforts to develop standards/guidelines employing state-of-the-art and accepted industry practices. AHRI does not certify or guarantee that any tests conducted under its standards/guidelines will be non-hazardous or free from risk.

ICS Code(s): xx.xxx.xxx

Note:

This is a new [standard/guideline/appendix]; a prior version does not exist.

This [standard/guideline/appendix] supersedes AHRI [Standard/Guideline/Appendix] [number]-[year] [units)].

This [standard/guideline/appendix] was reaffirmed [Month Year].

This [standard/guideline/appendix] was withdrawn [Month Year].

For [units] ratings, see AHRI [Standard/Guideline/Appendix] [number]-[year] [(units)].

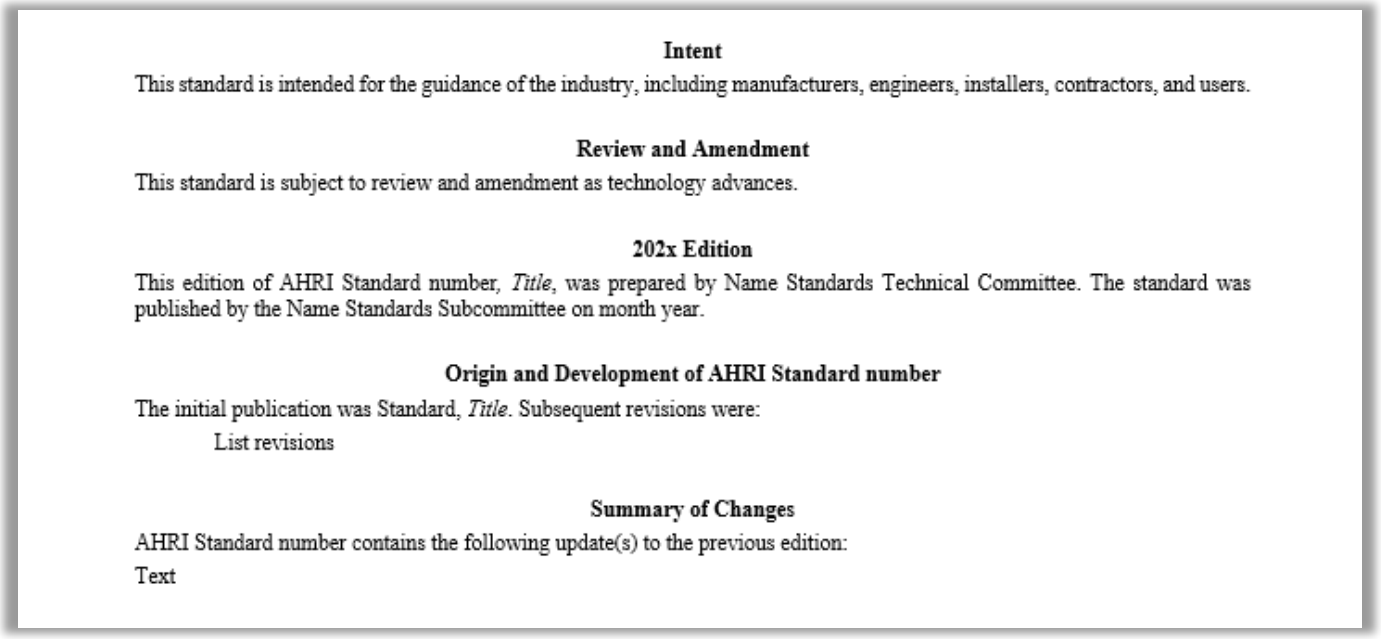
AHRI CERTIFICATION PROGRAM DISCLAIMER

AHRI Standards are developed independently of AHRI Certification activities and can have scopes that include products that are not part of the AHRI Certification Program. The scope of the applicable AHRI Certification Program can be found on the AHRI website at http://www.ahrinet.org.

B.2. Example of Front Matter Second Page After Cover Page

The following is an example of the second page after the cover page that includes:

- Intent *statement*, see Section 3.4.10
- Review and amendment *statement*, See Section 3.4.11
- Origin and development *statement*, see Section 3.4.12
- Summary of changes (option to incorporate a foreword), see Section 3.4.13



Intent

This standard is intended for the guidance of the industry, including manufacturers, engineers, installers, contractors, and users.

Review and Amendment

This standard is subject to review and amendment as technology advances.

202x Edition

This edition of AHRI Standard number, *Title*, was prepared by Name Standards Technical Committee. The standard was published by the Name Standards Subcommittee on month year.

Origin and Development of AHRI Standard number

The initial publication was Standard, *Title*. Subsequent revisions were:

List revisions

Summary of Changes

AHRI Standard number contains the following update(s) to the previous edition:

Text

B.3. Examples of Committee Membership Lists on the Page Following the Summary of Changes

This appendix includes examples of committee and working group membership lists. See Section 3.4.14.

B.3.1. Example Working Group Membership List and Scope Statement

The following is an example of a SWG Membership List and scope statement.

Committee Personnel

[Name] Standards Working Group

Company/Organization	Participant	Voting Role
Voting Organizations		
[Company Name]	[Participant Name], Chair	Alternate
	[Participant Name]	Primary
[Company Name]	[Participant Name], Vice-chair	Primary
	[Participant Name]	Alternate
	[Participant Name]	Nonvoter
[Company/Organization Name]	[Participant Name]	Primary
	[Participant Name]	Alternate
Nonvoting Organizations		
[Company/Organization Name]	[Participant Name]	Nonvoter
[Company/Organization Name]	[Participant Name]	Nonvoter
	[Participant Name]	Nonvoter
[Name of AHRI EA]		AHRI Staff Liaison

[Name] Standards Working Group Scope:

Scope statement

B.3.2. Example STC Membership List and Scope Statement

The following is an example of an STC membership list and scope statement.

[Name] Standards Technical Committee

Company/Organization	Participant	Voting Role
Voting Organizations		
[Company Name]	[Participant Name], Chair	Alternate
	[Participant Name]	Primary
[Company Name]	[Participant Name], Vice-chair	Primary
	[Participant Name]	Alternate
	[Participant Name]	Nonvoter
[Company/Organization Name]	[Participant Name]	Primary
	[Participant Name]	Alternate
Nonvoting Organizations		
[Company/Organization Name]	[Participant Name]	Nonvoter
[Company/Organization Name]	[Participant Name]	Nonvoter
	[Participant Name]	Nonvoter
[Name of AHRI EA]		AHRI Staff Liaison

[Name] Standards Technical Committee Scope:

Scope statement

B.3.3. Example SSC Membership List, Scope Statement, and Committee List Statement

The following is an example of an SSC membership list, SSC scope statement, and the committee list statement.

[Name] Standards Subcommittee

Company/Organization	Participant	Voting Role
Voting Organizations		
[Company Name]	[Participant Name], Chair	Alternate
	[Participant Name]	Primary
[Company Name]	[Participant Name], Vice-chair	Primary
	[Participant Name]	Alternate
	[Participant Name]	Nonvoter
[Company/Organization Name]	[Participant Name]	Primary
	[Participant Name]	Alternate
Nonvoting Organizations		
[Company/Organization Name]	[Participant Name]	Nonvoter
[Company/Organization Name]	[Participant Name]	Nonvoter
	[Participant Name]	Nonvoter
[Name of AHRI EA]		AHRI Staff Liaison

[Name] Standards Subcommittee Scope:

Scope statement

These lists represent the membership at the time the Standards Technical Committee and Standards Subcommittee were balloted on the final text of this edition. Since that time, changes in the membership may have occurred. Membership in these committees shall not in and of itself constitute an endorsement by the committee members or their employers of any document developed by the committee on which the member serves.

B.4. Example Consensus Body Membership List

The following is an example of a CB membership list. See Section 3.4.15.

[Name] Consensus Body

Participant	Interest Category Classification	State / Country
[Name] [Organization / Company]	[Category]	PA, USA
[Name] [Organization / Company]	[Category]	ON, Canada
[Name] [Organization / Company]	[Category]	Washington, DC, USA
[Name] [Organization / Company]	[Category]	WI, USA
[Name] [Organization / Company]	[Category]	CA, USA
[Name] [Organization / Company]	[Category]	ME, USA

APPENDIX C. EXAMPLES OF REFERENCE APPENDICES FOR STANDARDS AND GUIDELINES

C.1. Example of Appendix A References – Normative for Standards with Normative References

The following is an example of a normative reference list in Appendix A of standards. See Section 3.6.1.

Stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices. See Section 3.3 and The sections in stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices.

Table 3.

APPENDIX A. REFERENCES – NORMATIVE

This appendix lists all standards, handbooks, and other publications essential to the development and implementation of the standard. All references in this appendix are part of the standard.

A.1. AHRI Standard 110-2016, *Air-Conditioning and Refrigerating Equipment Nameplate Voltages*, 2016, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

A.2. AHRI Standard 210/240-2017 (I-P), *Performance Rating of Unitary Air-conditioning & Air-source Heat Pump Equipment (with Addendum 1)*, 2019, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

A.3. AHRI Standard 910-2014 (R2023) (I-P), *Performance Rating of Indoor Pool Dehumidifiers*, 2023, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

A.4. *ASHRAE Handbook of Refrigeration*, Chapter 49, Codes and Standards, 2006, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, USA.

A.5. ASHRAE Terminology. ASHRAE. Accessed October 1, 2023. https://www.ashrae.org/technical-resources/free-resources/ashrae-terminology.

A.6. Palmatier, E.P. *Construction of the Normal Temperature ASHRAE Psychrometric Chart*, ASHRAE Journal, Vol. 5, 2001, pp 55, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, USA.

A.7. "Privacy Policy," Privacy & Terms, Google, last modified July 1, 2021, https://www.google.com/policies/privacy/.

C.2. Example of Appendix A References – Normative for Standards without Normative References

The following is an example of Appendix A in standards that do not have any normative references. See Section 3.6.1.

Stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices. See Section 3.3 and The sections in stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices.

Table 3.

APPENDIX A. REFERENCES – NORMATIVE

This appendix lists all standards, handbooks, and other publications essential to the development and implementation of the standard. All references in this appendix are part of the standard.

None.

C.3. Example Appendix B References – Informative for Standards with Informative References

The following is an example of informative references in Appendix B in standards. See Section 3.6.1.

Stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices. See Section 3.3 and The sections in stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices.

Table 3.

APPENDIX B. REFERENCES – INFORMATIVE

This appendix lists all standards, handbooks, and other publications not essential but that can provide useful information and background. All references in this appendix are not part of the standard.

B.1. AHRI Standard 110-2016, *Air-Conditioning and Refrigerating Equipment Nameplate Voltages*, 2016, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

B.2. AHRI Standard 210/240-2017 (I-P), *Performance Rating of Unitary Air-conditioning & Air-source Heat Pump Equipment (with Addendum 1)*, 2019, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

B.3. AHRI Standard 910-2014 (R2023) (I-P), *Performance Rating of Indoor Pool Dehumidifiers*, 2023, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

B.4. *ASHRAE Handbook of Refrigeration*, Chapter 49, Codes and Standards, 2006, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, USA.

B.5. ASHRAE Terminology. ASHRAE. Accessed October 1, 2023. https://www.ashrae.org/technical-resources/free-resources/ashrae-terminology.

B.6. Palmatier, E.P. *Construction of the Normal Temperature ASHRAE Psychrometric Chart*, ASHRAE Journal, Vol. 5, 2001, pp 55, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, USA.

B.7. "Privacy Policy," Privacy & Terms, Google, last modified July 1, 2021, https://www.google.com/policies/privacy/.

C.4. Example Appendix B References – Informative for Standards without Informative References

The following is an example of Appendix B in standards that do not have informative references. See Section 3.6.1.

For guidelines, all references are informative and shall be listed Appendix A. See examples in Section C.5 and Section C.6.

Stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices. See Section 3.3 and The sections in stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices.

Table 3.

APPENDIX B. REFERENCES – INFORMATIVE

This appendix lists all standards, handbooks, and other publications not essential but that can provide useful information and background. All references in this appendix are not part of the standard.

None.

C.5. Example of Appendix A References – Informative for Guidelines with Informative References

The following is an example of informative references in Appendix A of guidelines. See Section 3.6.2.

Stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices. See Section 3.3 and The sections in stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices.

Table 3.

APPENDIX A. REFERENCES – INFORMATIVE

This appendix lists all standards, handbooks, and other publications not essential but that can provide useful information and background. All references in this appendix are not part of the guideline.

A.1. AHRI Standard 110-2016, *Air-Conditioning and Refrigerating Equipment Nameplate Voltages*, 2016, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

A.2. AHRI Standard 210/240-2017 (I-P), *Performance Rating of Unitary Air-conditioning & Air-source Heat Pump Equipment (with Addendum 1)*, 2019, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

A.3. AHRI Standard 910-2014 (R2023) (I-P), *Performance Rating of Indoor Pool Dehumidifiers*, 2023, Air-Conditioning, Heating and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22203, USA.

A.4. *ASHRAE Handbook of Refrigeration*, Chapter 49, Codes and Standards, 2006, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, USA.

A.5. ASHRAE Terminology. ASHRAE. Accessed October 1, 2023. https://www.ashrae.org/technical-resources/free-resources/ashrae-terminology.

A.6. Palmatier, E.P. *Construction of the Normal Temperature ASHRAE Psychrometric Chart*, ASHRAE Journal, Vol. 5, 2001, pp 55, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, USA.

A.7. "Privacy Policy," Privacy & Terms, Google, last modified July 1, 2021, https://www.google.com/policies/privacy/.

C.6. Example Appendix A References – Informative for Guidelines without Informative References

The following is an example of Appendix A in guidelines that do not have informative references. See Section 3.6.2.

Stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices. See Section 3.3 and The sections in stand-alone appendices should follow the structure and format of standards and guidelines, with subsections instead of appendices.

Table 3.

APPENDIX A. REFERENCES – INFORMATIVE

This appendix lists all guidelines, handbooks, and other publications not considered essential to the development and implementation of the standard. All references in this appendix are not part of the guideline.

None.

APPENDIX D. EXAMPLES OF PLACEHOLDER PAGES IN APPENDICES

D.1. Example of a Placeholder Page for a Removed Appendix

The following is an example of a placeholder page in a revised document for an appendix that has been removed. See Section 3.6.5.

APPENDIX G. TITLE – NORMATIVE/INFORMATIVE (REMOVED)

This appendix has been removed from this standard.

D.2. Example of a Placeholder Page for a Stand-alone Appendix

The following is an example of a placeholder page in a revised document for a stand-alone appendix and includes the ASHRAE 169 climate code for regional appendices. See Section 3.6.5.

APPENDIX H. TITLE [ASHRAE 169 CLIMATE CODE] – NORMATIVE/INFORMATIVE

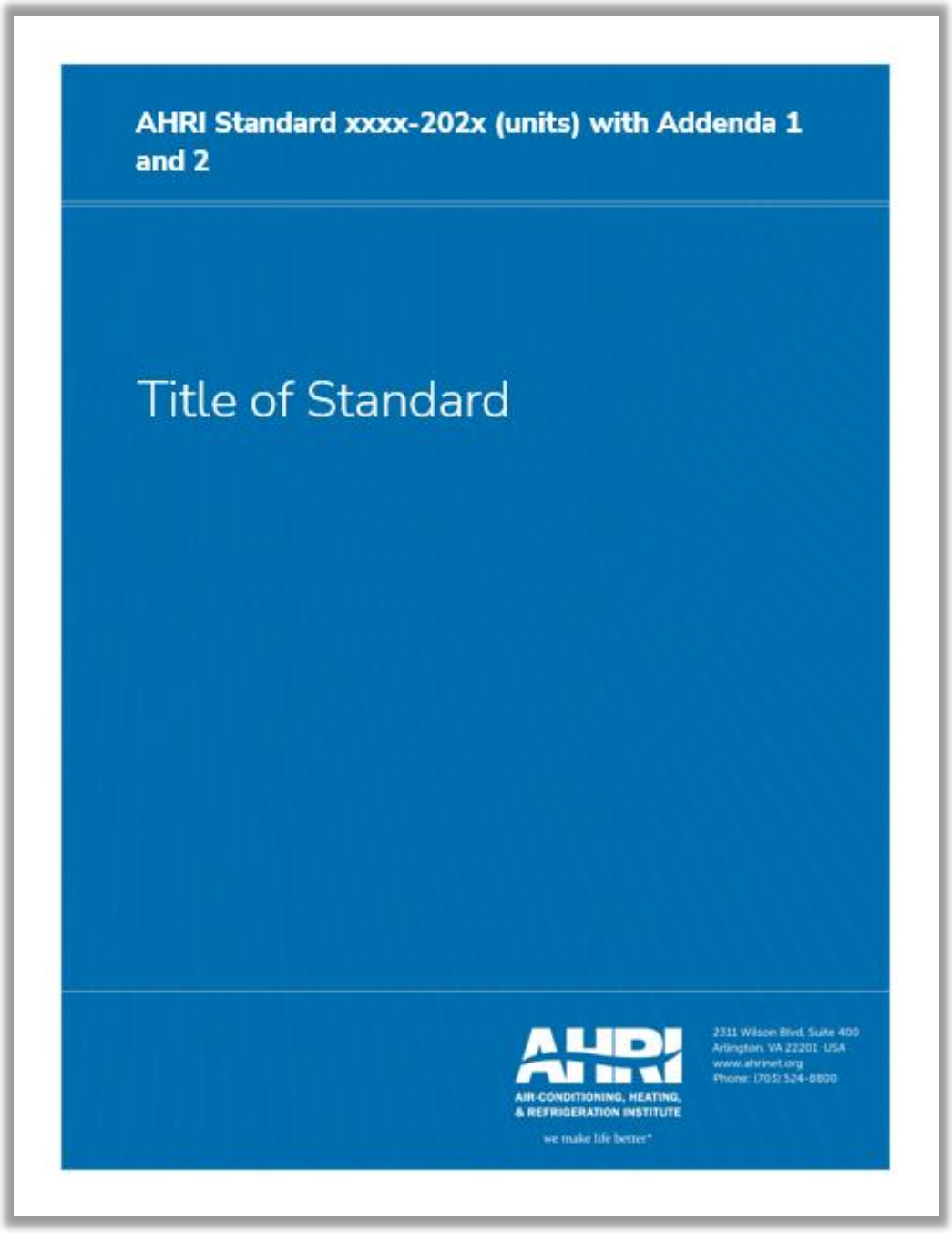
This appendix is published as a stand-alone document titled [*Title*].

APPENDIX E. EXAMPLE OF ADDENDA COVER PAGE AND FRONT MATTER FOR A STANDARD

E.1. Example Addenda Cover Page for a Standard

See Section 3.4.16.

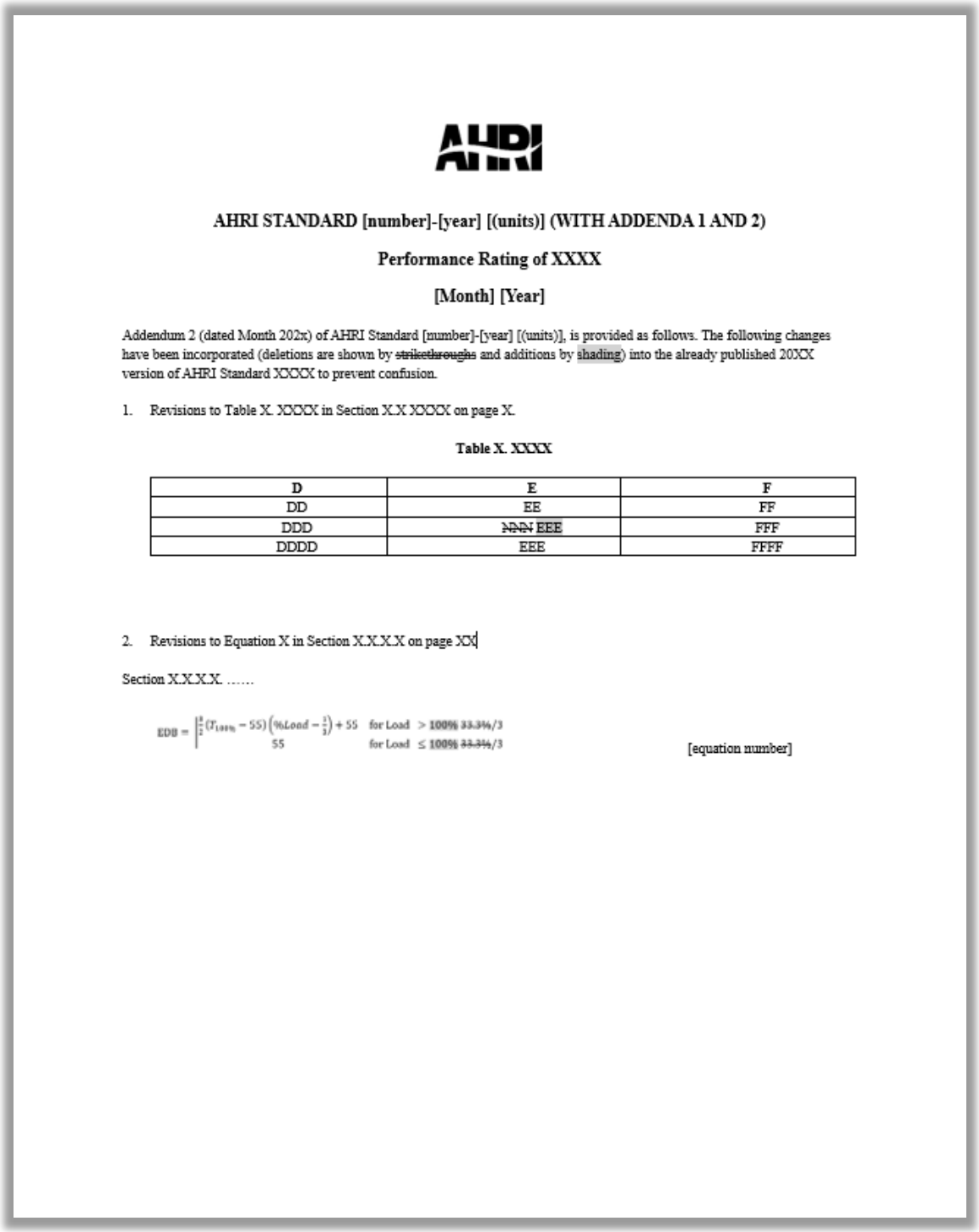
The following is an example cover page of a standard that includes an addenda.



E.2. Example Front Matter Pages for a Standard

See Section 3.4.16.

The following is an example of the front matter pages that provide descriptions of addenda in a standard.



AHRI STANDARD [number]-[year] [(units)] (WITH ADDENDA 1 AND 2)

Performance Rating of XXXX

[Month] [Year]

Addendum 2 (dated Month 202x) of AHRI Standard [number]-[year] [(units)], is provided as follows. The following changes have been incorporated (deletions are shown by ~~strikethroughs~~ and additions by shading) into the already published 20XX version of AHRI Standard XXXX to prevent confusion.

1. Revisions to Table X. XXXX in Section X.X XXXX on page X.

Table X. XXXX

D	E	F
DD	EE	FF
DDD	~~NNN~~ EEE	FFF
DDDD	EEE	FFFF

2. Revisions to Equation X in Section X.X.X.X on page XX

Section X.X.X.X. .....

$$EDB = \begin{cases} \frac{3}{2}(T_{100\%} - 55)\left(\%Load - \frac{1}{3}\right) + 55 & \text{for Load } > 100\%\ 33.3\%/3 \\ 55 & \text{for Load } \leq 100\%\ 33.3\%/3 \end{cases}$$

[equation number]

AHRI STANDARD [number]-[year] [(units)] (WITH ADDENDUM 1)

Performance Rating of XXXX

[Month] [Year]

Addendum 1 of AHRI Standard XXX-202X, is provided as follows. The following change has been incorporated (deletions are shown by ~~strikethrough~~ and additions by shading) into the already published 20XX version of AHRI Standard XXXX to prevent confusion.

1. Revisions to Table XX. XXXXXXXXX in Appendix X. XXXXXXXX on page 49.

A	B	C
AA	BB	CC
AAA	~~AAAA~~ BBB	CCC
AAAA	BBBB	CCCC

APPENDIX F. AHRI POLICY ON UNITS OF MEASUREMENTS IN AHRI STANDARDS (2009)

F.1. Policy

The AHRI Standards Policy Committee (SPC) has established that all AHRI standards and guidelines will use SI units. Starting 1 January 2009, all product sections were directed to review their portfolio of standards and guidelines, and at the next scheduled revision, execute one of the following two options:

F.1.1. Convert the standard to SI only:

- SI with no soft conversion
- All rating, testing, and certification at rational SI conditions

F.1.2. Issue dual standards - an SI standard and an I-P standard:

- SI standard with no soft conversion and
- I-P standard with no soft conversion
- All rating, testing, and certification at the condition(s) selected by the product section: either rational SI, rational I-P, or both
- Each standard shall be identified as SI or I-P and with a unique number:
    - AHRI Standard 365- (I-P)–2009 &
    - AHRI Standard 366 (SI)-2009

Rational SI units and rational I-P units means using values based on logical or coherent numbers. Rational values are usually, but not necessarily, rounded numbers. Rational values are not soft-converted mathematical equivalents and are sometimes referred to as hard-converted.

F.2. Rationale for SI AHRI Standards

AHRI is a global leader in HVAC&R performance rating standards. It is in AHRI's members' interests to have a single, worldwide standard by which to rate and certify products. While this would be ideal, it is recognized that there are competing performance rating standards, including: ISO TC 86 standards, CEN European standards, Chinese GB standards, and Japanese JRAIA standards. Many of these are compulsory in their country or region, and AHRI standards may have little or no chance of being used there in the foreseeable future.

However, in other markets (notably India, the Middle East, and Latin America) there is competition among the various HVACR standards. AHRI members have an opportunity to have their standards chosen over the competition, thus giving them the advantage of already being certified in the marketplace. Even in countries or regions that now have their own mandated standards, the indigenous industry might work to harmonize those standards with AHRI standards. For AHRI standards to be accepted in a virtually 100% metric world, they must be offered in SI units.

F.3. Guidance in the Development of AHRI Standards

Each product section retains the authority to select its own AHRI standard rating conditions. Their SI standard can simply be the original I-P standard with rating points and other data replaced with rational SI units or the standard rating points can be substantially rewritten to appeal to a targeted market(s). The Standards Policy Committee (SPC) will monitor the product section's selections and recommend common conditions where practical.

Staff will acquire copies of similar standards and make them available to the standards writing committees for this work. These may include ISO, CEN, and JRAIA standards. In some cases, the product section may desire to incorporate multiple rating points in cases where the product section is looking to serve a variety of markets with different climates. For cases where there is a global consensus single rating point (e.g. a widely used ISO standard, a prevailing EU-directive-based condition, etc.), the product section may elect to focus on that.

- Examples of AHRI I-P Rational Rating Conditions: 80.0 F, 67.0 F, and 95.0.
- Examples of AHRI SI Rational Rating Conditions: 27.0 C, 19.0 C, and 35.0 C.

It is desirable to retain as many references to the ASHRAE method of testing standards as possible. However, some of our new standards may require the use of methods outside the traditional channels in order to gain acceptance in regions outside of North America. This may include the referencing of ISO or other standards.

Different terminology should be applied as needed to differentiate between I-P rating descriptors and SI rating descriptors that are not comparable.

- Examples of AHRI I-P Rating Descriptors: Capacity = Btu/h, EER = Btu/(W•h), SEER = Btu/(W•h), HSPF = Btu/(W•h), IEER
- Examples of AHRI SI Rating Descriptors: Capacity = watts, EER = watts/watt, COP = watt/watt, ICOP

F.4. Resources for Developing AHRI SI Standards

The current editions of all AHRI standards already include all formulas and equations in both SI and I-P units. All AHRI standards also already include dual units throughout, with both SI units and I-P units included. In most cases, the primary units are I-P rational with soft equivalent SI units included. A few are SI-only with rational SI units provided.

F.5. Conversion Factors

For converting values from I-P units to SI units, use the conversion factors from the ASHRAE SI Guide Conversion Spreadsheet available online: https://www.ashrae.org/SIGuide-spreadsheet