**ASHRAE Standard and Guideline   
Working Draft Template**

**INTRODUCTION**

This document provides comprehensive content guidance and style instruction to help project committees (PCs) develop a working draft of a new or revised ASHRAE standard or guideline. The primary goal is for ASHRAE Standards and Guidelines to all share a basic format and style. It is also intended to help PCs avoid potential rework, which may result in significant delays in getting the draft prepared for public review. C**ommittees must request approval from ASHRAE staff to deviate from this template. If you have any questions or issues with this template, please contact the ASHRAE Senior Manager of Standards**. Without proper approvals, work submitted by a committee may revert to follow this format, or the committee may be asked to resubmit the draft using the format below.

A “clean” version of the Standard & Guideline template without tips, it is included at the end of this document as [Attachment 1](#Att1).

As you read this document, please pay special attention to the following:

1. ASHRAE’s copyright policy must not (per PASA and Rules of the Board (ROB) be violated.
2. Standards must (per ROB) be written in mandatory language (does not apply to guidelines). All guidelines must be written in informative language (ASHRAE Rules of the Board 1.201.004.6).
3. Properly identified informative notes within normative sections of the standard and in normative appendices appendix may be used to clarify text.
4. The final electronic copy of the draft standard or guideline must (per Publications) be available in Microsoft Word format.
5. Each figure, table, and equation in the standard or guideline must (per Publications) be numbered and must have a title.
6. Each figure, table, and equation in the published standard or guideline must (per Publications) be referenced by number in the document.
7. Artwork for the published standard or guideline must (per Publications) be legible, reproducible, and electronic—in JPEG, TIFF, 600 dpi or better and native file format. Artwork must (per Publications) be provided and updated by the project committee. Artwork from other non-ASHRAE sources must be used with permission of the copyright holder and include an attribute line: (“Reproduced with permission of [copyright holder].”)
8. Where compliance with referenced documents is required, standards cite such documents in a Normative References Section. Where compliance with a referenced (sourced) document is not required, standards or guidelines should list such documents in an Informative References section.
9. Informative material and examples that are included for reference but not needed may be moved to a supplemental files website.

In the course of drafting a standard or guideline, keep in mind that the PC may determine that the full draft, or any portion thereof, may benefit from an informal public review of new, unusual, or potentially controversial elements in the document. In such cases, the PC may vote to submit the draft for an Advisory Public Review (APR). The underlying concept of the APR is to obtain public input early in the development process to enable the PC to deal with and potentially resolve issues that may impede progress. Additional detail on the APR process is included in PASA, Clause 7.2.1.1, Advisory Public Review (APR).

Your SPLS Liaison and ASHRAE staff can answer any questions you may have on the working draft process or will direct you to others who can provide assistance. For comments, questions, or suggestions on this document, please contact Connor Barbaree, ASHRAE Senior Manager of Standards, at [cbarbaree@ashrae.org](mailto:cbarbaree@ashrae.org), or Susan LeBlanc, Standards Administrator, at [sleblanc@ashrae.org](mailto:sleblanc@ashrae.org).

For comments, suggestions, or questions, contact:

Name, Chair

Tel: xxx-yyy-zzzz

E-mail: nnn.nnnn@xxxx.yyyy.zzz

**Title**

*(Tip: Insert approved title here.)*

**Project Committee (PC): e.g., GPC 27P or SPC 23.1-2010R**

**Working Draft No. 01***(Tip: Increment the working draft number and date  
 each time the working draft is updated. Archive previous versions   
for potential future reference.)*

*(Tip: The information below must [per PASA] be included on the cover page of all standard and guideline working drafts. Violation of this policy by any PC member is grounds for dismissal from the PC.)*

***©* mm/dd/yyyy ASHRAE**

***This is a working draft document intended for review only by the cognizant ASHRAE groups and other designated reviewers and is not for distribution to any private interests, individuals, or third parties that are not designated as ASHRAE reviewers for this document.***

***This document may not be distributed in whole or in part in either paper or electronic form outside of the PC without the express permission of the MOS and shall include a statement indicating such.***

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

**TABLE OF CONTENTS**

[Foreword 4](#_Toc94180296)

[1. Purpose (Title each section. All caps, Bold, times Roman, 12 pt, Left Justify.) 4](#_Toc94180297)

[2. Scope 4](#_Toc94180298)

[3. Definitions and Symbols 4](#_Toc94180299)

[3.1 Definitions 5](#_Toc94180300)

[3.2 SYMBOLS (if any) 5](#_Toc94180301)

[3.3 ACRONYMS (if any) 5](#_Toc94180302)

[4. Administration 6](#_Toc94180303)

[4.1 Basic Requirements for a Working Draft. 6](#_Toc94180304)

[4.2 Formatting Requirements 6](#_Toc94180305)

[4.3 General Requirements 6](#_Toc94180306)

[4.4 Units Policy 7](#_Toc94180307)

[4.5 Contractual Language, Commercial References, Proprietary Sources of Material, and Patents 7](#_Toc94180308)

[4.6 Use of Copyrighted Material 8](#_Toc94180309)

[5. First Normative Requirements for A working draft 8](#_Toc94180310)

[6. Additional Major Sections (insert sections as needed) 8](#_Toc94180311)

[7 Normative References 8](#_Toc94180312)

[NORMATIVE APPENDIX A:](#_Toc94180313) [ASHRAE UNITS POLICY IN STANDARDS AND GUIDELINES 10](#_Toc94180314)

[NORMATIVE APPENDIX B:](#_Toc94180315) [COMMERCIAL TERMS AND CONDITIONS 13](#_Toc94180316)

[Normative APPENDIX C:](#_Toc94180317) [PROPRIETARY MATERIALS, SPECIFIC SOURCES OF   
SUPPLY, OR INDIVIDUALLY BUILT APPARATUS 14](#_Toc94180318)

[NORMATIVE APPENDIX D:](#_Toc94180319) [PATENTS IN ASHRAE SCDS 16](#_Toc94180320)

[INFORMATIVE Appendix E:](#_Toc94180321) [INFORMATIVE REFERENCES AND BIBLIOGRAPY 18](#_Toc94180322)

[INFORMATIVE Appendix F:](#_Toc94180323) [Tips for Updating and Sharing Working Drafts 19](#_Toc94180324)

*(Tip: Although it can provide a valuable “roadmap” for the PC, a Table of Contents in the working draft of the document is not required. In any case, publications will prepare a TOC in the galley.)*

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

***Note:*** *This header must be included at the beginning of all standards. Use the text below for guidelines.*

**(This foreword is not part of this guideline. It is merely informative and does not contain requirements necessary for conformance to the guideline.)**

# Foreword

*Type foreword in italics.*

*(Tips:*

1. *The foreword provides an overview of the need and application of the standard or guideline.*
2. *The foreword provides a summary of the changes that have been incorporated in a revision.)*

# Purpose

*(Tips:*

1. *Title each section.*
2. *FORMAT: All caps, Bold, times Roman, 12 pt, Left Justify.)*

**1.1 Purpose [First Subsection].** Copy the approved purpose statement here, using as many subsections as necessary.

*(Tips: Subtitle each subsection, each word in the subsection title should be capitalized. Times Roman, 12 PT, bold, left justify)*

# Scope

**2.1 Scope [First Subsection].** Copy the approved scope statement here, using as many subsections as necessary.

*(Tips:*

1. *The Title, Purpose and Scope (TPS) must be the approved Title, Purpose and Scope as shown on the ASHRAE website at:* [*www.ashrae.org/tps*](http://www.ashrae.org/tps)*.*
2. *A TPS may be changed prior to submitting a Public Review Draft. The “Proposed Changes to an Approved TPS” form can be found on the* [*PC Chairs Toolkit*](http://www.ashrae.org/standards-forms-procedures) *page. Minor editorial changes must be approved by the Senior MOS and SPLS liaison. All substantive proposed changes must (per PASA) be approval by SPLS and Standards Committee and in addition, policy level standards and guidelines, by Technology Council.*
3. *If substantive changes are needed, the proposed TPS changes must be submitted and approved well in advance of completing the draft standard or guideline, to ensure that the document as written is consistent with the approved TPS.)*

# Definitions and Symbols

## Definitions

*term:* definition.

*term:* definition.

*term:* definition.

*(Tips:*

1. *Definitions* ***must not include requirements****.*
2. *Definitions must appear somewhere in the text of the standard or guideline. If terms are defined but never used in the text of the standard or guideline, they may be removed editorially.*
3. *Definitions should include terms from the ASHRAE Terminology Wiki if the term from the Wiki meets the needs of the standard or guideline. The Wiki can be accessed at:* [*https://www.ashrae.org/resources--publications/free-resources/ashrae-terminology*](https://www.ashrae.org/resources--publications/free-resources/ashrae-terminology).
4. *If the normal dictionary definition is applicable for a term, the term should not be defined in the standard or guideline. )*

## SYMBOLS (if any)

|  |  |
| --- | --- |
| Symbol | Definition |
|  |  |
|  |  |
|  |  |

## ACRONYMS (if any)

|  |  |
| --- | --- |
| Acronym | Acronym meaning |
|  |  |
|  |  |
|  |  |

*(Tips:*

1. *Section 3 may also include a list of Acronyms used in the document either following or replacing Section 3.2 Symbols.*
2. *Acronyms must appear somewhere in the text of the standard or guideline. If an acronym exists in 3.2 but us never used in the text of the standard or guideline, it may be removed editorially.*
3. *The acronym and its reference are not italicized throughout the document.)*

# Administration

*Section 4 should contain administrative requirements for the standard or guideline if they exist. If there are no administrative requirements, then Section 4 is the beginning of the normative portion of the standard.*

*(Tip: Draft documents use the following formatting structure. The final document will be formatted by Special Publications using columns and fonts consistent with other ASHRAE standards and guidelines.)*

## Basic Requirements for a Working Draft.

Type text here.

## 

### Subtitle

Type text here.

### Subtitle

Type text here.

**4.1.2.1** **Subtitle**

Type text here.

*(Tip: If possible limit the number of subsection levels to four (4) or fewer as shown here.)*

## Formatting Requirements

### Lists

#### Ordered lists should be no deeper than four levels and be formatted as follows:

1. List level 1
   1. List Level 2
      1. List Level 3
         1. List Level 4

#### Lists should be one of three types.

**List Style #1**

In List Style #1, a list is structured, capitalized, and punctuated

1. continuously,
2. as a complete sentence, and
3. with each list item appearing on its own line, as shown here.

**List Style #2**

In List Style #2, a list is introduced using a complete sentence, followed by a colon as shown here. This list style is good for when list items are longer and composed of complete sentences/thoughts:

1. Each list item is a complete sentence with terminal punctuation.
2. Here’s another list item.
3. This is the last list item.

**List Style #3**

List Style #3 is identical to list Style 2, except all list items are sentence fragments with no end punctuation. This style is good to use when all list items are very short phrases or single words:

1. Item 1
2. Item 2
3. Item 3

### The final electronic copy of the draft standard or guideline must (per Publications) be available in Microsoft Word format.

### Each figure, table, and equation in the standard or guideline must (per Publications) be numbered and must have a title.

### Each figure, table, and equation in the published standard or guideline must (per Publications) be referenced by number in the document.

### Artwork for the published standard or guideline must (per Publications) be legible, reproducible, and electronic—in JPEG, TIFF, 600 dpi or better and native file format. Artwork must (per Publications) be provided and updated by the project committee.

## General Requirements

**4.3.1** **Mandatory Language Standards.** All proposed or revised standards must be written in mandatory language (ASHRAE Rules of the Board 1.201.004.5). Refer to the ASHRAE Guide to Writing Standards in Mandatory Language for the normative portions of the standard (see [Attachment 2](#MandatoryL)).

**Exception.** This is an exception to 4.3.1 (Do not include Section number after Exception if it only applies to the section immediately preceding)

*(Tip: Informative notes may be used to provide explanatory information or any information considered indispensable for the use of the standard or guideline. Informative notes begin with the word “Informative Note(s)”in* ***bold*** *letters and are placed after the section of the standard to which the note applies. If the “informative note” is more than two sentences, PCs should consider placing the information in an informative appendix and refer to the appendix in an informative note in the body of the document. Where more than one informative note is needed, the notes should be numbered sequentially.)*

***Informative Note:*** *When you have an informative note, Bold and Italicize “Informative Note”*

***Informative Notes:*** *When you have multiple informative notes:*

1. *Bold and italicize “Informative Notes”*
2. *Include a numbered list.*
3. *Should be written in a way that states clarifying facts, descriptions, pros and cons, etc.*
4. *All list items have terminal punctuation, regardless of whether they’re a complete sentence or fragment.*

**4.3.2 Code-Language Standards.** Standards that are intended for code adoption must be concise and written in appropriate code language with one simple and direct prescriptive methods for compliance, and, where deemed appropriate by the PC, with one or more alternative performance paths (ASHRAE Rules of the Board 1.201.004.5) For Code-Intended Standards, the normative portions of draft documents are written in accordance with the ASHRAE Guide to Writing Standards in Code-Intended Language (see  [Attachment 3](#CodeL)).

*(Tip: A webcast recording of the PC Chairs Training on “Mandatory and Code Intended Language” is available for download on the ASHRAE* [*PC Chairs Toolkit*](http://www.ashrae.org/pcchairstoolkit) *page. This should be viewed by all members of the PC prior to drafting the standard.)*

**Exceptions.** When a section has multiple exceptions, include them in a numbered list preceded by a lead-in sentence. All of the following exceptions apply.

1. This is exception 1.
2. This is exception 2.

**4.3.3** **Guidelines**. All guidelines must be written in informative language (ASHRAE Rules of the Board 1.201.004.6).

**Exception to 4.3.2 and 4.3.3.** This is an exception to 4.3.2 and 4.3.3 (Include Section numbers after Exception if it applies to more than the section immediately preceding).

## Units Policy

ASHRAE Standards Committee Documents (SCDs) must conform to the ASHRAE Units Policy. Official interpretations of standards must be formatted in the same system(s) of units as the parent document. PC requests for waiver of these requirements must be submitted to the SPLS Liaison for approval by SPLS. A waiver must be approved by StdComm and granted by the ASHRAE Publisher/Director of Publications & Education. For more information, see Normative Appendix A, “ASHRAE Units Policy in Standards and Guidelines.” **Note:** Units must be included in both SI and I-P format.

*(Tip:**For helpful information, refer to the online version or downloadable PDF file, SI for HVAC&R - a guide to SI Units in HVAC&R, on the ASHRAE website using one of the following links:*

* [*SI for HVAC&R - a guide to SI Units in HVAC&R*](https://www.ashrae.org/resources--publications/handbook/the-si-guide)
* [*SI for HVAC&R - a guide to SI Units in HVAC&R*](https://www.ashrae.org/File%20Library/docLib/Handbook/SI-Guide-for-HVACR_2013.pdf) *(PDF))*

## Contractual Language, Commercial References, Proprietary Sources of Material, and Patents

ASHRAE standards and guidelines as shown in Table 1:

**Table 1. Rules for Contractual Language, Commercial References, Patents, etc.**

|  |  |
| --- | --- |
| Requirement 1 | Must not contain commercial references or contractual language—see *Normative Appendix B, “Commercial Terms and Conditions.”* |
| Requirement 2 | Must not require the use of proprietary materials or specific sources of supply or testing without allowing alternatives—see *Normative Appendix C, “Proprietary Materials, Specific Sources of Supply, or Individually Built Apparatus.”* |
| Requirement 3 | Must not require use of a patented item with no alternatives except as provided in *Normative Appendix D, “Patents in ASHRAE SCDs.”* |

*(Tip:*

* 1. *When referring to a figure, table or equation, write: “as shown in Figure X,” Do not write “as shown below” or “as shown in the figure above.”*

## Use of Copyrighted Material

### ASHRAE Material. If the PC wants to include copyrighted material from ASHRAE, permission must be obtained from ASHRAE Staff before inclusion.

### Non-ASHRAE Material. If the PC wants to include copyrighted material from sources other than ASHRAE, the PC must (per Publications) obtain copyright permission from the organization that owns the copyright. If there is a cost for using non-ASHRAE copyrighted material, inform ASHRAE staff. Failure to get permission to use copyrighted material may hold up public review and publication of the document.)

*(Tip: Section 5 begins the normative or informative portion of the standard or guideline if there is an administrative section.)*

# First Normative Requirements for A working draft

# Additional Major Sections (insert sections as needed)

Additional Major Sections:

1. Method of Test (MOT) standards and Rating standards normally include these additional major sections: Classifications, Requirements, Instruments, Methods of Testing, and Test Report
2. Method of Measurement standards normally include these additional major sections: Classifications, Requirements, Instruments, Methods of Testing, Uncertainty, and Test Report.
3. Design standards normally include major sections as logically defined by the PC. Section content should be focused enough to assure that now more than three subsections are needed. Major sections should focus on aspects of design, rather than type of requirements (e.g., mandatory or prescriptive).

# 7 Normative References

**7.1 Normative References**

* 1. Normative references to other documents to include the specific section or requirement referenced, along with the name of the document in which the specific section or requirement appears and the referenced document must be explicitly required in the normative text using mandatory language. For instance, ASHRAE Standard 189.1-20111, section 7.4.2 refers to a specific section in ASHRAE standard 90.1-2013. The reference could be written as follows:

“The building envelope shall comply with Section 5.2.3 of ANSI/ASHRAE/IES Standard 90.1 with the following modifications and additions.”, or

“The building envelope shall comply with ANSI/ASHRAE/IES Standard 90.1 with the following modifications and additions.”

* 1. Normative referenced material is listed in a table in the last numbered section of the standard (here it’s “7.0 Normative References”). The table includes three columns: Reference (for the name of the referenced material, including the address of the publishing entity and the date of publication), Title (for the title of the document containing the referenced material), and Section (for the section number in the draft standard wherein the referenced material is cited).

|  |  |  |
| --- | --- | --- |
| **Reference** | **Title** | **Section** |
| ANSI/ASHRAE/IES Standard 90.1-2016 | Energy Standard for Buildings  Except Low-Rise Residential Buildings | 7.4.2 |

**7.2 Informative References in Appendices or Appendices**

1. In standards or guidelines, “informative references” are typically numerically superscripted sequentially in order of appearance within the text if shown like a bibliography.
2. The material referenced is included in an Informative Appendix or Annex, which is not part of the standard. Each document is listed with its corresponding superscript, in the format shown below.

1. ASHRAE. 2011. ANSI/ASHRAE/USGBC/IES Standard 189.1-2011, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*. Atlanta: ASHRAE. [sample reference only]

2. NFPA. 2006. NFPA 211-2006, *Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel Burning Appliances*. National Fire Protection Association, Quincy, MA. [sample reference only]

3. California Energy Commission. 2001. California Title 24 Standards, *ACM Manual*, Appendix F, Sections 4.3.8.2.1 and 4.3.7.2. [sample reference only]

4. ASTM. 2007. ANSI/ASTM E1554-07, Standard Test Methods for Determining External Air Leakage of Air Distribution Systems by Fan Pressurization. ASTM International, West Conshohocken, PA. [sample reference only]

**(This appendix is part of this standard. It contains requirements necessary for conformance to the standard. It has been processed according to the ANSI requirements for an ASHRAE standard, including public review, a consensus process, and the right of unresolved objectors to appeal at ASHRAE or ANSI.)**

***Note:*** *Include this header for Normative Appendices.*

*Tips:*

1. *Normative Appendices precede Informative Appendices.*

# NORMATIVE APPENDIX A

# ASHRAE UNITS POLICY IN STANDARDS AND GUIDELINES

**A1 UNITS POLICY (Reprint of ROB 1.201.002)**

The units use or application policy shall include, as a minimum, time-dated directions on the use of SI and I-P in all ASHRAE publications.

TC 1.6 shall serve as the authority on SI and I-P usage and application.

Research projects; codes, standards, guidelines and addenda thereto; special publications; Insights articles; Journal articles; and Handbooks shall be prepared using the International System of Units (SI) and/or inch-pound units (I-P) in formats approved by the Publishing and Education Council.

The Publishing and Education Council shall review annually the approved formats to be used in ASHRAE publications, considering suggestions from members and committees, and shall establish any changes in the approved formats.

The Publishing and Education Council shall consider this Units Policy annually and shall recommend to the Board of Directors the formats to be used in ASHRAE publications.

1. The format for ASHRAE publications shall be dual units, except in cases determined by the Publishing and Education Council, where two separate versions are to be published, where one is rational SI and the other is rational I-P. For selected ASHRAE standards and guidelines, the Standards Committee may approve use of SI units only.
2. In dual unit publications, the units used in calculating the work being reported shall be listed first.
3. The alternate system of units should follow in parentheses. Authors shall round off equivalents in the alternate system of units so that they imply the same accuracy as is implied with the primary system of units.
4. Exceptions require the approval of the Director of Publishing and Education.

Handbook volumes shall be published in separate SI and I-P editions.

**A2 Basic Approach.** For standards and guidelines, the policy is satisfied by use of dual units. Immediately after formation of the PC, the PC must develop a Units Format Plan (UFP) based on the prioritized options listed in Table A-1. If dual units are to be used, the PC must identify in the UFP which system of units will be primary (i.e., listed first). The UFP will be submitted as part of the Work Plan to the SPLS Liaison for recommendation to SPLS.

If the UFP includes any approach not allowed by the Units Policy, an exception must be justified in writing and attached with the UFP for recommendation by the SPLS Liaison and approved by SPLS. If SPLS approves the UFP and request for waiver, SPLS will request that the waiver be granted by the Director of Publications and Education in writing. The waiver should be obtained before the PC begins work to develop or revise the standard or guideline. This will help to assure approval of a non-conforming draft by the SPLS when the PC ultimately recommends public review.

**A3 Steps if Incorporating Dual Rational Units.** The PC may use dual rational systems of units in a standard or guideline by using the following steps:

1. Review the options listed in Table A-1.
2. Decide whether the primary system of units is to be SI or I-P. See Table A-1.
3. Identify in the UFP whether the primary and secondary systems are to be included in a single document or in separate documents. Approval must be obtained if separate documents are recommended.
4. If introducing SI units for the first time, decide which units are most appropriate (or preferred) for each parameter. See A5.
5. Determine rational values for the subject parameters. See “definitions” below.
6. Determine an appropriate level of precision (i. e., number of significant figures) for the values and tolerances used. In the case of dual rational systems of units, check that the level of precision is approximately comparable for the two systems of units. See “Resources” below.
7. List the primary system of units first followed by the secondary system of units in parenthesis.

**A4 Steps If Incorporating Equivalent Units.** Follow Steps a, b, d (if the primary system of units is SI), and f above. Paragraph 5(b) of the ASHRAE Units Policy gives requirements for rounding to be used in Step f.

**A5 Resources.** For step A3(d) above, page 5 of the ASHRAE publication SI for HVAC&R, May 1999, lists the preferred SI units for typical HVAC equipment. The same information is given under the heading SI UNITS for HVAC and R Catalogs on p. 139 of the ASHRAE Terminology of HVAC&R, Second Edition, 1991. Conversion factors are given on page 6 of SI for HVAC&R and p. 140 of the ASHRAE Terminology of HVAC&R.

**A6 Designating Types of Conversions.** The terms “hard” and “soft,” with respect to conversions between SI and I-P systems of units, are not self-explanatory. More descriptive terms for hard and soft conversions would be “rational” vs. “equivalent” conversions.

**TABLE A-1: Preferred Systems of Units for ASHRAE Standards and Guidelines**

|  |  |  |
| --- | --- | --- |
|  | (A)  Standards/Guidelines Not Intended for Use as Regulatory Documents | (B)  Standards/Guidelines Intended for Use as Regulatory Documents |
| 1. Preferred | Primary system: SI Rational  Secondary system: I-P Rational | Primary system: I-P Rational  Secondary system: SI Rational |
| 2. Acceptable (Requires Justification) | Primary system: SI Rational  Secondary system: None | Primary system: SI Rational  Secondary System: None |
| 3. Acceptable  (Requires Justification) | Primary system I-P Rational  Secondary system: SI Rational | Primary system: SI Rational  Secondary system: I-P Rational |

Notes:

1. If an I-P only system of units or two versions (both SI and I-P) in separate publications are proposed to be used, a request for waiver must be approved by SPLS and the waiver must be approved by the Director of Publications and Education.
2. All primary systems of units shall be in rational format. Secondary units shall be in rational format unless justification is approved to use equivalent units.

**(This appendix is part of this standard. It contains requirements necessary for conformance to the standard. It has been processed according to the ANSI requirements for an ASHRAE standard, including public review, a consensus process, and the right of unresolved objectors to appeal at ASHRAE or ANSI.)**

***Note:*** *Include this header for Normative Appendices.*

# NORMATIVE APPENDIX B

# COMMERCIAL TERMS AND CONDITIONS

**B1** Provisions involving business relations between buyer and seller such as guarantees, warranties, assignment of responsibilities for compliance, and other commercial terms and conditions shall not be included in an ASHRAE Standard. This does not exclude provisions concerning the determination of conformity with a standard.

**B2** An ASHRAE standard shall not prescribe a proprietary agency for quality control or testing to the exclusion of other qualified agencies.

**B3** Requests for waiver of these requirements must be approved by the StdComm.

**(This appendix is part of this standard. It contains requirements necessary for conformance to the standard. It has been processed according to the ANSI requirements for an ASHRAE standard, including public review, a consensus process, and the right of unresolved objectors to appeal at ASHRAE or ANSI.)**

***Note:*** *Include this header for Normative Appendices.*

# Normative APPENDIX C

# PROPRIETARY MATERIALS, SPECIFIC SOURCES OF SUPPLY, OR INDIVIDUALLY BUILT APPARATUS

**C1 Proprietary Materials**

An ASHRAE standard shall not have the effect of requiring proprietary materials to the exclusion of others, except as allowed under C2.2.

**C2 Use of Trademarks and Specific Sources of Supply for Apparatus, Reagents, and Reference Materials**

To ensure the widest possible use of ASHRAE standards, it is imperative that sources of supply exist for apparatus, reagents and reference materials. This is particularly important for unique, unusual, or difficult-to-obtain items.

**C2.1** It is the responsibility of the project committee to ensure that apparatus, reagents, and reference materials are available to the public so that a specific procedure can be performed. Each time an existing standard is reviewed or revised, and at the time a new standard is proposed, the committee shall make such a determination.

**C2.2** The PC shall provide to the MOS the names and addresses of sources of supply and shall update this information at the times indicated in C2.1. When specific trademarks are used or specific sources of supply are given, the following rules shall apply:

1. Reference to specific trademarks shall be permitted only when it has been found necessary to write part or all of the standard or guideline on the basis of a single commercial apparatus, reagent, or reference material in order to obtain sufficiently reproducible results. References to specific commercial sources of supply shall be permitted only when one source, or a few sources, of supply are known and the source or sources are not likely to be generally known.
2. Generally, the trademarks of apparatus, reagents, or reference materials should not appear in the title of methods. When the name of the apparatus is in the public domain such as “Rockwell” or “Saybolt Viscometer,” such names may appear in the titles if approved by the Standards Committee. Specific trademarks or apparatus, when necessary, may be included in the section on apparatus or in the scope, or in both, as determined by the project committee in consultation with the MOS. Where it is possible to describe the apparatus and limiting parameters in the main text and to give the trademarks only in notes and footnotes, this should be done.
3. Where compliance with a standard is based on the use of a specific primary apparatus, but the test method or other requirement can be modified to permit the use of an alternate apparatus, a note shall be included after the description of the primary apparatus stating this. When an alternative test method is given, the project committee shall include applicable calibration procedures to permit the user of the alternate test method to ensure that the alternate test results are comparable to those that would have been obtained using the primary apparatus.
4. The decision as to how references to specific apparatus, reagents, and reference materials or to source of supply should appear in the standard will be left to the PC involved, in consultation with the MOS.
5. Information on sources of supply, when necessary, shall be included in footnotes.
6. The decision as to whether alternative apparatus, reagents, or reference materials are equivalent shall be determined by the PC involved.
7. When a mutually agreeable decision cannot be reached by the MOS and the PC, the matter shall be referred to the StdC.

**C3 Individually Built Apparatus**

In those cases where the test apparatus cannot be purchased but is required to be built, full information on the construction shall be included or referenced in the SCD.

**(This appendix is part of this standard. It contains requirements necessary for conformance to the standard. It has been processed according to the ANSI requirements for an ASHRAE standard, including public review, a consensus process, and the right of unresolved objectors to appeal at ASHRAE or ANSI.)**

***Note:*** *Include this header for Normative Appendices.*

# NORMATIVE APPENDIX D

# PATENTS IN ASHRAE SCDS

**D1 Introduction**

When a project committee proposes to require the use of a patented item in a standard and there are no known alternatives, the committee shall include statements in public review draft(s) and in a footnote in the standard indicating a willingness to consider acceptable alternatives.

**D2 Recommended Statements**

The following statements are recommended. However, the committee may choose other wording more appropriate for specific circumstances.

**D2.1 Statement in Instructions for Public Review Comments.** The instructions to the public for preparing comments on a public review draft shall include a request for acceptable alternatives. The following is suggested wording:

The (name of material, product, process, apparatus) is claimed to be covered by a patent held by (name and address of company). If you are aware of an acceptable alternative(s) to the patented item, please attach to your comment form a description of the alternative. All suggestions will be considered by the PC.

**D2.2 Statement in Footnote of Document.** If acceptable alternatives are not identified, a footnote shall be included in the standard. The following is suggested wording:

The (name of material, product, process, and apparatus) is claimed to be covered by a patent held by (name and address of company). Interested parties are invited to submit information regarding the identification of acceptable alternatives to this patented item to the MOS, ASHRAE, 180 Technology Parkway NW, Peachtree Corners, GA 30092.

The footnote shall be cited in the specific section of the document where the patented item is first mentioned. When the entire document is written around a patented item, the footnote shall be cited in the scope.

**D2.3 ASHRAE Disclaimer of Liability as to Patented Inventions.** Neither ASHRAE nor an ASHRAE project committee shall be responsible for identifying all patents under which a license is required in using an ASHRAE standard nor for conducting inquiries into the legal validity of such patents. Each ASHRAE standard, where applicable, shall include a note worded as follows:

Note: The user’s attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights. ASHRAE takes no position respecting the validity of any such claim (s) or of any patent rights asserted in connection with any item mentioned in this standard. If a patent holder has filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, then details may be obtained from the MOS. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

**D3 Statement from Patent Holder**

**D3.1 Statement.** Prior to approval of such a proposed ASHRAE standard or guideline, the MOS shall receive from the patent holder (in a form approved by ASHRAE) either assurance in the form of a general disclaimer to the effect that the patent holder does not hold and does not anticipate holding any essential patent claim(s), or assurance that a license to use the material, product, process, or apparatus claimed to be covered by the patent will be made available to applicants desiring to utilize the license for the purpose of implementing the standard either

1. under reasonable terms and conditions that are demonstrably free of any unfair discrimination or
2. without compensation and under reasonable terms and conditions that is demonstrably free of any unfair discrimination.

**D3.2 Record of Statement.** A record of the patent holder’s statement (and a statement of the basis for considering such terms and conditions free of any unfair discrimination) shall be placed and retained in the files of ASHRAE and ANSI during the life of the standard.

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

***Note:*** *Include this header for Informative Appendices.*

*Tips:*

1. *Use an Informative References and Bibliography to list documents cited informatively, documents for further reading, and documents that the PC used to develop or revise the standard. Where appropriate, reference these documents in the informative text and cite them using an “XX”superscript, where “XX” is the numbered informative reference (see example below).*
2. *Informative Appendices follow Normative Appendices.*

# INFORMATIVE Appendix E

# INFORMATIVE REFERENCES AND BIBLIOGRAPY

E1. ASHRAE. 1991. *Terminology of HVAC&R*, American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. 1791 Tullie Circle, NE, Atlanta, GA 30329. [sample reference only]

…

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

***Note:*** *Include this header for Informative Appendices.*

# INFORMATIVE Appendix F

# Tips for Updating and Sharing Working Drafts

F1 . Before Each PC Meeting

1. Request PC members to submit their proposed working draft changes and revisions in track changes, and then use track changes features to incorporate all the proposed changes and revisions in the next version of the working draft (Working Draft 12, for example). Turn off the “use balloons” feature in track change options to show word changes in the document and to eliminate “format tracks.” This will help to keep the focus on the proposed substantive changes.
2. Send a meeting agenda and an electronic copy of the current working draft to each of the PC members, those previously approved by the MOS, and to your SPLS and staff liaison. Do not distribute electronic copies to anyone else.

F2. During Each PC Meeting

1. Use the electronic version created for the meeting (Working Draft 12 in this example) on your laptop to modify, accept, or reject proposed changes based upon PC consensus, and to insert comments where appropriate.
2. If you have access to a projector, projecting the working draft onto a screen helps keep everyone focused on the discussion. ASHRAE will provide screens (but not projectors) to meeting rooms when included in the meeting room request.
3. If the discussion on a given point diverges, assign two or three participants to collaborate and propose changes for the next meeting, and insert a comment to reflect that assignment.
4. Summarize and document any controversial issues discussed within the PC and any potential problems associated with the draft that may arise later.

F3. After Each PC Meeting

1. Clean up the working draft version that was modified during the meeting by making editorial and format changes, as appropriate. Save the resulting working draft as a new version (Working Draft 13 in this example) with a new revision date.
2. Distribute the revised version to PC members along with the PC meeting minutes and action items/assignments. Before the next conference call or in person meeting, request proposed changes and incorporate into a new version for use at the next meeting.

**ATTACHMENTS**

Attachment 1



Attachment 2



Attachment 3

