



STANDARD

ANSI/ASHRAE Standard 32.2-2018
(Supersedes ANSI/ASHRAE Standard 32.2-2003)

Methods of Testing for Rating Pre-mix and Postmix Beverage Dispensing Equipment

Approved by ASHRAE on June 25, 2018, and by the American National Standards Institute on June 26, 2018.

ASHRAE® Standards are scheduled to be updated on a five-year cycle; the date following the Standard number is the year of ASHRAE approval. The latest edition of an ASHRAE Standard may be purchased on the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: orders@ashrae.org. Fax: 678-533-2129. Telephone: 404-636-8400 (worldwide) or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

© 2018 ASHRAE ISSN 1041-2336



ASHRAE Standard Project Committee 32.2
Cognizant TC: 10.7, Commercial Food and Beverage Cooling, Display, and Storage
SPLS Liaison: Wayne H. Stoppelmoor, Jr.

Daryl G. Erbs*, *Chair*
Steven Cousins*

Clinton D. Finstad*
Randall J. Haseman*

Kathy Magee*
Scott A. Mitchell*

* Denotes members of voting status when the document was approved for publication

ASHRAE STANDARDS COMMITTEE 2017–2018

Steven J. Emmerich, *Chair*

Donald M. Brundage, *Vice-Chair*

Niels Bidstrup

Michael D. Corbat

Drury B. Crawley

Julie M. Ferguson

Michael W. Gallagher

Walter T. Grondzik

Vinod P. Gupta

Susanna S. Hanson

Roger L. Hedrick

Rick M. Heiden

Jonathan Humble

Srinivas Katipamula

Kwang Woo Kim

Larry Kouma

Arsen K. Melikov

R. Lee Millies, Jr.

Karl L. Peterman

Erick A. Phelps

David Rouin

Peter Simmonds

Benjamin Stanke

Wayne H. Stoppelmoor, Jr.

Richard T. Swierczyna

Jack H. Zarour

Lawrence C. Markel, *BOD ExO*

M. Ginger Scoggins, *CO*

Steven C. Ferguson, *Senior Manager of Standards*

SPECIAL NOTE

This American National Standard (ANS) is a national voluntary consensus Standard developed under the auspices of ASHRAE. Consensus is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this Standard as an ANS, as "substantial agreement reached by directly and materially affected interest categories. This signifies the concurrence of more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution." Compliance with this Standard is voluntary until and unless a legal jurisdiction makes compliance mandatory through legislation.

ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

ASHRAE Standards are prepared by a Project Committee appointed specifically for the purpose of writing the Standard. The Project Committee Chair and Vice-Chair must be members of ASHRAE; while other committee members may or may not be ASHRAE members, all must be technically qualified in the subject area of the Standard. Every effort is made to balance the concerned interests on all Project Committees.

The Senior Manager of Standards of ASHRAE should be contacted for

- a. interpretation of the contents of this Standard,
- b. participation in the next review of the Standard,
- c. offering constructive criticism for improving the Standard, or
- d. permission to reprint portions of the Standard.

DISCLAIMER

ASHRAE uses its best efforts to promulgate Standards and Guidelines for the benefit of the public in light of available information and accepted industry practices. However, ASHRAE does not guarantee, certify, or assure the safety or performance of any products, components, or systems tested, installed, or operated in accordance with ASHRAE's Standards or Guidelines or that any tests conducted under its Standards or Guidelines will be nonhazardous or free from risk.

ASHRAE INDUSTRIAL ADVERTISING POLICY ON STANDARDS

ASHRAE Standards and Guidelines are established to assist industry and the public by offering a uniform method of testing for rating purposes, by suggesting safe practices in designing and installing equipment, by providing proper definitions of this equipment, and by providing other information that may serve to guide the industry. The creation of ASHRAE Standards and Guidelines is determined by the need for them, and conformance to them is completely voluntary.

In referring to this Standard or Guideline and in marking of equipment and in advertising, no claim shall be made, either stated or implied, that the product has been approved by ASHRAE.

CONTENTS
ANSI/ASHRAE Standard 32.2-2018
Methods of Testing for Rating Premix and Postmix Beverage Dispensing Equipment

SECTION	PAGE
Foreword	2
1 Purpose	2
2 Scope	2
3 Definitions	2
4 Classification	2
5 Measurements	3
6 Test Conditions	3
7 Test Procedure General Requirements	3
8 Standby Energy Consumption Test	3
9 Performance Tests	4
Informative Appendix A: Reporting Forms for Equipment Tested Using ANSI/ASHRAE Standard 32.2	6
Informative Appendix B: Daily Energy Efficiency Metric	10

NOTE

Approved addenda, errata, or interpretations for this standard can be downloaded free of charge from the ASHRAE website at www.ashrae.org/technology.

© 2018 ASHRAE

1791 Tullie Circle NE · Atlanta, GA 30329 · www.ashrae.org · All rights reserved.

ASHRAE is a registered trademark of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
ANSI is a registered trademark of the American National Standards Institute.

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

FOREWORD

ASHRAE Standard 32.2 prescribes a uniform method for testing and rating the capacity and efficiency of premix and postmix beverage dispensing equipment.

The 2018 revision includes the addition of performance testing at normal room temperature, high ambient conditions, and very-high ambient conditions. Testing for pull-down and standby performance now are separated into individual tests, and a new informative appendix suggests a method to use the test data for an energy efficiency metric.

This standard was prepared under the auspices of ASHRAE. It may be used, in whole or in part, by an association or government agency with due credit to ASHRAE. Adherence is strictly on a voluntary basis and merely in the interest of obtaining uniform standards throughout the industry.

1. PURPOSE

The purpose of this standard is to specify uniform methods of testing for rating the capacity and energy efficiency of premix and postmix beverage dispensing equipment.

2. SCOPE

This standard

- establishes uniform methods of testing for determining the performance of premix and postmix chilled-beverage dispensers that are electrically operated and mechanically refrigerated or ice cooled;
- defines the terms used in the methods of testing; and
- establishes test conditions for rating

This standard does not cover

- drink-quality elements other than temperature or
- frozen beverage types.

3. DEFINITIONS

beverage: as defined in this standard, a carbonated or noncarbonated drink other than water, for human consumption.

casual drink temperature: temperature of the first drink drawn after an extended time interval.

draw rate: number of standard drinks per minute drawn from the equipment at equal time intervals.

ice-cooled equipment: mechanical refrigerated equipment using a cold block as a direct heat transfer medium and for reserve cooling capacity.

flow rate: volume of beverage drawn from the equipment per unit of time.

ice-cooled equipment: equipment that uses a cold plate cooled by ice produced separately from the dispenser as a direct heat transfer medium.

integral-type equipment: equipment with the refrigeration system and dispensing valves contained in one cabinet.

peak draw capacity: the maximum number of standard drinks drawn under standard test conditions without the beverage exceeding 4.4°C (40°F) at a draw rate defined by the manufacturer within a given time limit.

postmix beverage: a beverage that is blended in the equipment by mixing syrup with plain or carbonated water.

premix: a ready-to-drink beverage that has been mixed and supplied by a beverage manufacturer.

primary circuit: a circuit that has greater cooling capacity than the other circuits in the unit.

recirculating unit: a remote cooling unit that transports cold water and/or cold carbonated water through one or more lines to the dispensing valves and recirculates the water(s) back to the cooling unit for refrigeration.

refrigeration cycle: consists of the ON time and OFF time periods for the mechanical refrigeration system in response to the temperature controls for the bath and/or ice bank, starting with compressor cut-out and ending with the next successive compressor cut-out.

remote dispensing unit: a premix or postmix dispenser having the dispensing valves separated from the refrigerating and/or carbonating unit but connected by means of product lines.

standard draw capacity: number of standard drinks drawn without the liquid exceeding 40°F (4.4°C) at a standard draw rate of four standard drinks per minute at test conditions.

standard drink: a premix or postmix beverage of 354.9 mL (12 oz) liquid volume that is drawn and has a maximum beverage temperature of 4.4°C (40°F).

standard drink temperature: the minimum temperature reached by the standard drink after dispensing into the test cup as measured with a thermocouple placed into the center of the cup.

standby: equipment operation in a maintained cold-state condition without beverage draws.

water-bath equipment: mechanically refrigerated equipment that uses water for heat transfer and that optionally freezes and stores ice for reserve cooling capacity.

4. CLASSIFICATION

For the purpose of this standard, equipment is classified as follows:

- Mechanically refrigerated.** Beverage chilling is accomplished through the inclusion of an electrically powered refrigeration apparatus. This can either be an integral or remote arrangement and generally includes a means for energy storage in the form of a cold block, water bath, or ice bank.