ADDENDA

ANSI/ASHRAE Addendum h to
ANSI/ASHRAE Standard 30-2019

Method of Testing Liquid Chillers

Approved by ASHRAE and by the American National Standards Institute on April 30, 2025.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

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 ISSN 1041-2336

Approved American National Standard
ANSI
www.ansi.org

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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.

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

FOREWORD

ASHRAE Standard 30 prescribes methods for obtaining performance data relating to liquid-chilling or liquid-heating equipment using any type of compressor. The intent of this standard is to provide uniform test methods to measure the performance of this equipment by addressing the test and instrumentation requirements, test procedures, data to be recorded, and calculations to generate and confirm valid test results.

Addendum h makes the following revisions:

a. *Updates Section 8.2.1 to state that all heat exchangers connected to the chiller shall remain connected for the duration of the test.*
b. *Clarifies that remote tubing lengths and sizes must be specified in the test plan. For example, if this standard is used to support testing in accordance with AHRI 550/590: for standard rating tests, the tubing length shall be 25 ft; for other rating conditions, the length may vary per the test plan.*
c. *Adds the requirement that redundant voltage measurements must be within ±2%.*
d. *Clarifies the operation condition tolerance and stability criteria during fan cycling.*

Informative Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum h to Standard 30-2019

Modify Section 6.4 as follows.

6.4 Plan. A test plan shall document all requirements for conducting the test. This includes a list of the required full-load and part-load test points and associated operating conditions, including adjusted liquid temperature targets based on the rated fouling factor allowance. In addition to the requirements specifically listed in this standard the test plan shall include intended heat exchanger operation (useful or not) and all other input signals or controls positions necessary to place the chiller in the operating mode for each test to be performed.

For remote heat exchangers, the tubing line sizes, insulation, and details of installation shall be defined in the test plan.

Add new Section 6.7.4.1.5 as follows.

6.7.4.1.5 Redundant Voltage Measurement. Where redundant voltage measurement is required, the difference between the average voltage and either measurement shall be less than 2%.

Modify Section 8.2.1 as follows.

8.2.1 Setup. The chiller package to be tested shall be set up at the test facility in accordance with the manufacturer's instructions, including but not limited to support of installation mounting points, connections for liquid, connections for power supply, test instrumentation, charging of refrigerant or oil, etc. All liquid ↔ refrigerant heat exchangers shall remain connected for the duration of the test. Noncondensable gases, if present, shall be removed from the system.

Add new Section 8.2.1.2 as follows.

8.2.1.2 Refrigerant Tubing for Remote Heat Exchangers. The unit shall be installed with interconnecting refrigerant tubing as defined in the test plan. All refrigerant tubing and components shall be installed within the same test room as all other parts of the tested equipment. Refrigerant tubing line sizes, insulation, and details of installation shall be in accordance with the test plan and shall be recorded prior to testing.

Modify Table 6-6 as follows.

Table 6-6 Definition of Operating Condition Tolerances and Stability Criteria

Heat Exchanger Type	Measurement or Calculation Result			Values Calculated from Data Samples: Mean	Values Calculated from Data Samples: Std. Dev.	Operating Condition Tolerance Limits	Stability Criteria
Air ↔ refrigerant Not as useful capacity	Air *temperature*[c]	Entering	Dry-bulb	$\overline{T}$	s_T	Heat rejection with fan cycling: $\lvert\overline{T} - T_{target}\rvert \le 0.56\ \Delta°C\ [1.00\ \Delta°F]$	Heat rejection with fan cycling: $S_T \le 0.42\Delta°C\ [0.75\Delta°F]$
						When nonfrosting: $\lvert\overline{T} - T_{target}\rvert \le 0.56\ \Delta°C\ [1.00\ \Delta°F]$	When nonfrosting: $S_T \le 0.42\Delta°C\ [0.75\Delta°F]$
						When frosting: $\lvert\overline{T} - T_{target}\rvert \le 1.11\ \Delta°C\ [2.00\ \Delta°F]$	When frosting: $S_T \le 0.56\Delta°C\ [1.00\Delta°F]$
						During defrost cycle: No requirement	During defrost cycle: $S_T \le 1.39\Delta°C\ [2.50\Delta°F]$
			Wet-bulb			When nonfrosting: $\lvert\overline{T} - T_{target}\rvert \le 0.56\ \Delta°C\ [1.00\ \Delta°F]$	$S_T \le 0.28\Delta°C\ [0.50\Delta°F]$
						When frosting: $\lvert\overline{T} - T_{target}\rvert \le 0.83\ \Delta°C\ [1.50\ \Delta°F]$	When frosting: $S_T \le 0.42\Delta°C\ [0.75\Delta°F]$
						During defrost cycle: No requirement	During defrost cycle: No requirement

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ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

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As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

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