

Air-Cooled Chillers (ACCL) and Water-Cooled Chillers (WCCL) Certification Program Update

2021

AHRI CERTIFIED®
www.ahridirectory.org

Air-Cooled Water Chilling Packages
AHRI Standards 550/590 and 551/591

AHRI CERTIFIED®
www.ahridirectory.org

Water-Cooled Water Chilling and
Heat Pump Water-Heating Packages
AHRI Standards 550/590 and 551/591

AHRI CERTIFIED®
www.ahridirectory.org

Air-Cooled Water Chilling Packages
EN Standards 14511 and 14825

AHRI CERTIFIED®
www.ahridirectory.org

Water-Cooled Water Chilling and
Heat Pump Water-Heating Packages
EN Standards 14511 and 14825

Updated Sections of the ACCL and WCCL OMs (2021)

➤ **Effective May 1, 2021**

- Require compliance with 2020 versions of AHRI Standards 550/590 (I-P) and 551/591 (SI). All references updated.
- Clarify fifth point percent load calculation and re-rate procedure. Added examples in Appendix B (ACCL) or A (WCCL).
- Clarify procedure for determination of Maximum Approved Test Stand Capacity.
- Penalty tests may be assigned to the same test year as the failed test or the following year, to be determined by AHRI.
- Added certification statement flowchart in Appendix C (ACCL) or Appendix B (WCCL).
- Compliance Committee to approve Test Stand User testing fees
- Minor edits throughout
 - Updated “Fluid” to “Liquid”
 - Standardize terminology on “Cooling Capacity”

Updated Sections of the ACCL and WCCL OMs (2021)

➤ **Effective December 31, 2021**

- Updates to certification statements
 - Revised certification statement for units containing freeze protection.
 - Selections for units with freeze protection must include performance of the unit rated with water on the same software output report or catalog to claim certification
 - Clarify statement to be used for application ratings outside the scope of the standard.
 - WCCL: Selections for heating or heating and cooling must include heating performance at full-load standard rating conditions on the same software output report or catalog to claim certification.
 - Removed redundant section on Alternate Certification.
 - Aligned EN Certification Statement between ACCL and WCCL.

Require compliance with 550/590-2020 and 551/591-2020

- **Why:** An extension was previously granted to allow participants to use 550/590-2018 and 551/591-2018 until May 1, 2021. That extension expired, so participants must now use the current 2020 versions.
- **What:** Removed note from preface that had extended required compliance date to May 1, 2021. All references updated to match new versions.
 - For a summary of changes in the standard please refer to the presentation:

[AHRI 550/590 & 551/591 Changes from 2018 with Errata](#)

Clarify 5th Point Percent Load and Re-Rate

- **Why: Resolve ambiguity in fifth point percent load calculation and re-rate procedure.**
- **What: Updated sections 3.8.1 and 3.9.3.**
 - AHRI to select a capacity for the 5th point. Clarify that if software requires a separate selection for the 5th point, the selected capacity is the target, not percent load.
 - Clarify determination of additional test points for 5th point re-rates.
 - Clarify that re-rate percentage is determined without tolerances.
 - Allow use of interpolation to determine passing points for re-rate boundary.
 - Added appendix to include examples for clarity.

5th Point Re-Rate Example

B3.1 5th Point Re-Rate Example. AHRI selects the 5th point as 70% Load and 80°F air temperature for a discrete unloading chiller. The Participant's selection rating software generates performance at these conditions. The chiller is tested at 60% Load and 80% Load, and interpolation is used to calculate the performance at 70% Load. The test fails at 8% below rated efficiency, and the Participant decides to re-rate.

The Participant selects four (4) additional test points as shown in Figure A1. Efficiency at all four points passes, so no further testing is required. The Participant chooses to use interpolation to determine four (4) additional intermediate points that pass, and these points are used to determine the re-rate boundary. The re-rate must be applied to reduce efficiency within the entire shaded region by 8%.

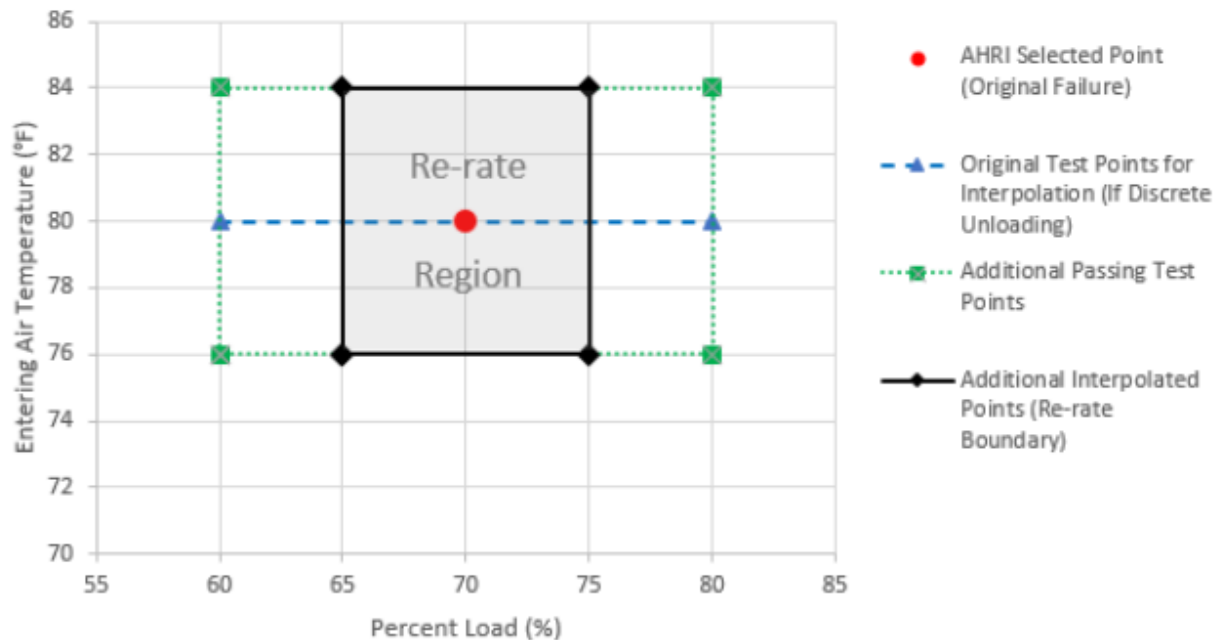


Figure B1: Example of 5th Point Re-rate

Clarify procedure for determination of Maximum Approved Test Stand Capacity

- **Why: Provide transparency by aligning language in OM with AHRI's process.**
- **What:**

3.5.1.3 Maximum Approved Test Stand Capacity. AHRI will determine the Maximum Approved Test Stand Capacity as the minimum of the following values:

- Tested Full Load Capacity divided by 0.85;
- Declared Maximum Capacity (Operating Range of Test Stand) on Form ACCL-FA3; or
- Program Scope limit per Table 1 (600 tons or 2,110 kW).

Note: If the tested full load capacity divided by 0.85 exceeds the declared maximum capacity, the Participant has the option to revise Form ACCL-FA3.

The Maximum Approved Test Stand Capacity will be valid for six (6) years, contingent upon the Test Stand remaining continuously approved during that period. If the Test Stand approval expires, the Maximum Approved Test Stand Capacity will also expire and will be recalculated following the next inspection.

Penalty Test

- **Why: Avoid delays in completing penalty tests.**
- **What: Penalty tests may be assigned to either the same test year as the failed test or the following year.**
 - AHRI will determine the test year depending on when the re-rate occurs.

3.9.4.1 *Involuntary Re-rate Confirmation.* Following an involuntary re-rate, participants shall be subject to a Penalty Test in addition to the requirements of Section 3.1, to confirm the re-rated performance of a model selected from the re-rated BMG. Depending on when the re-rate occurs, the Penalty Test may be assigned to the same test year as the failed test or the following test year. If the re-rated BMG is discontinued, then a model from another BMG shall be selected to complete the Penalty Test. The Penalty Test satisfies the requirements of Section 9.16 of the General OM.

Approval of Test Stand User Testing Fees

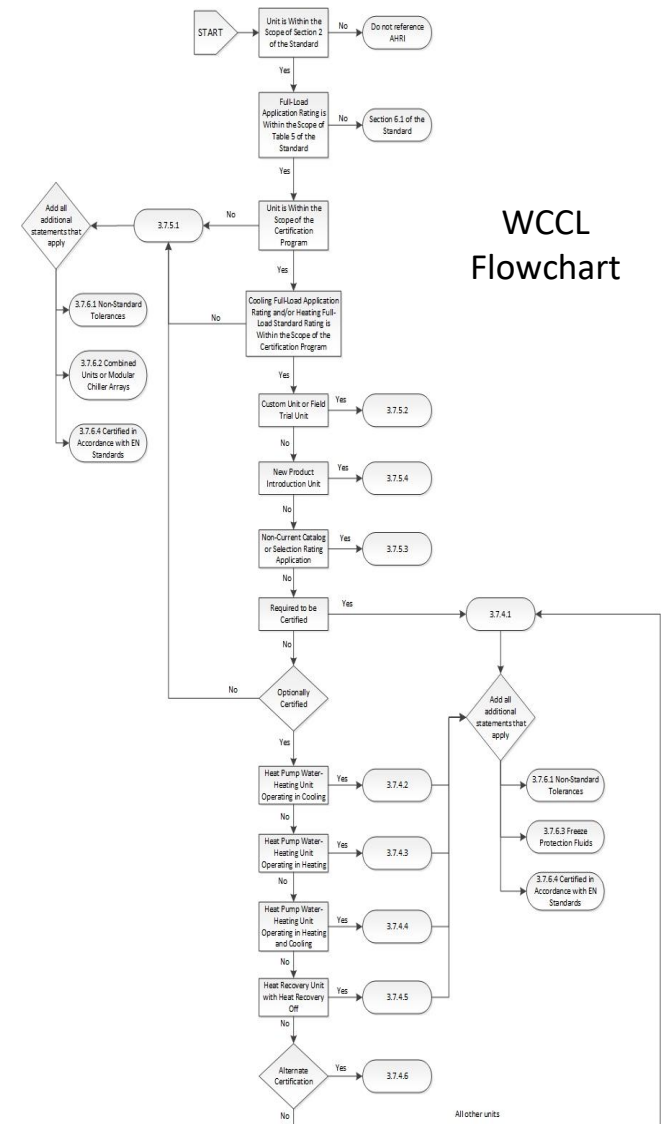
- **Why: Liquid Chillers Section no longer exists.**
- **What: Test Stand User testing fees to be approved by Compliance Committee.**

10.3.2 Test Stand Provider. The Test Stand Provider shall:

- Allow AHRI Certification testing of Test Stand User's units at AHRI approved test facilities within 120 days of notification by AHRI;
- Permit Test Facility Users to witness the testing in accordance with the Program Governing Documents. All data, test results, calculations, reports, information and other documents gathered or prepared by Test Stand Provider become the property of AHRI in accordance with the Program License Agreement and shall be removed (i.e. deleted and destroyed) from the records of the Test Stand Provider immediately after it has been provided to AHRI;
- Operate the Test Stand when conducting testing to be witnessed by the Representative. The Test Stand User shall not be permitted to participate in the operation of the Test Stand during test but may supervise the operation and adjustment of the chiller; and
- Invoice the Test Stand User testing fees which have been approved by the AHRI **Liquid Chillers Section**/**WCCL Compliance Committee** for AHRI Certification Program testing.

Certification Statement Flowchart

- Why: Increased likelihood that participants will see and use the flowchart.
- What: Incorporated Certification Statement Flowchart as an appendix to the OMs. Added a reference in section 3.7.4
 - Flowcharts were previously published on the AHRI website.



Certification Statements: Freeze Protection

- **Why:** Freeze protection ratings are not certified. This change ensures selections for units with freeze protection include certified performance (water only) when claiming certification. Temperature was removed to avoid confusion because selections below 36°F are outside the scope of 550/590.
- **What:**

3.7.6.3 Units with an Evaporator or Condenser Which Contains ~~Fluid-Liquid~~ for Freeze Protection. For performance presented of units with an evaporator or condenser which contains ~~fluid-liquid~~ for freeze protection, the following statement shall be presented: "Unit contains freeze protection ~~fluids-liquids~~ in the condenser or in the evaporator ~~with a leaving chilled fluid temperature above 32°F [0°C]~~ and is certified when rated per the Standard with water."

Note: Performance of the unit rated per the Standard with water shall be displayed on the same selection software output or catalog; otherwise, the selection is outside the scope of the certification program.

Certification Statements: WCCL Heating Units

- **Why: Heating performance is certified at full-load standard rating conditions only. This change ensures selections include certified performance when claiming certification.**
- **What:**

3.7.4.3 *Heat Pump Water-Heating Units Operating in Heating.* "Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Heat Pump Water-Heating unit operating in heating is **only** certified at full-load standard rating conditions. Certified units may be found in the AHRI Directory at www.ahridirectory.org."

Note: Heating performance at full-load standard rating conditions shall be included on the selection software output report or catalog in order to claim certification; otherwise, the selection is outside the scope of the certification program.

3.7.4.4 *Heat Pump Water-Heating Units Operating in Heating and Cooling.* "Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Heat Pump Water-Heating unit operating in heating and cooling is **only** certified at full-load heating standard rating conditions and cooling application rating conditions. Certified units may be found in the AHRI Directory at www.ahridirectory.org."

Note: Heating performance at full-load standard rating conditions shall be included on the selection software output report or catalog in order to claim certification; otherwise, the selection is outside the scope of the certification program.

Certification Statements: Application Ratings Outside the Scope of the Standard

- **Why: Clarify what statement should be used when application ratings are outside the scope of the Standard.**
- **What:**

3.7.5 Statements Regarding Certification – Non-Certified Selections. All Primary Catalogs and Primary Selection Rating Application outputs for non-certified selections which reference AHRI and are within the scope of the Standard shall include one (1) of the statements shown in Sections 3.7.5.1 through 3.7.5.4. For application ratings outside the scope of the standard, refer to Section 6.1 of the Standard. Refer to Section 3.7.5.5 for Primary Catalogs and Primary Selection Rating Application outputs which include performance which is rated or certified by an organization other than AHRI.

Certification Statements: EN Certification

- **Why: Update WCCL EN Certification Statement to match ACCL.**
- **What:**

3.7.6.4 Units Certified In Accordance with EN Standards. For performance presented of units certified in accordance with EN Standards 14511 and 14825 the following statement shall be presented: "Unit is certified in accordance with EN Standards 14511 and 14825 Standard Rating Conditions."

Certification Statements: Alternate Certification

- **Why: Section was redundant with 3.7.5.1.**
- **What: Removed section 3.7.5.5**

~~3.7.5.5 — *Alternate Certification*. If AHRI certified performance is presented in accordance with another standard or certification program (i.e. certified by an organization other than AHRI) the following statement may be included: "Outside the scope of AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, but is rated in accordance with AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI)."~~