



**U.S. DEPARTMENT OF ENERGY (DOE)
WALK-IN COOLER & FREEZER ENERGY EFFICIENCY RULEMAKING
SUMMARY & FREQUENTLY ASKED QUESTIONS**

Rulemaking History

On June 3, 2014 The U.S. Department of Energy (DOE) published a final rule establishing energy conservation standards for refrigeration equipment, enclosures and doors used in Walk-In Cooler & Freezers. Citing errors in the analysis DOE conducted to develop the efficiency standards for condensing units and unit coolers, the refrigeration industry legally challenged portions of the original rulemaking in Federal appellate court in April 2015.

On July 29, 2015, the DOE and the refrigeration industry agreed to a settlement of the litigation that vacated the efficiency standards for low temperature condensing units and both medium and low temperature unit coolers. The efficiency standards for medium temperature condensing units and those associated with the panels and doors used in Walk-In Coolers & Freezers were not changed as part of the settlement.

On December 28, 2016, the DOE published an amended WICF Test Procedure Final Rule and pre-published the Final Rule for the updated Energy Conservation Standards for Low Temperature (freezer) condensing units and package system and all Unit Coolers that resulted from the ASRAC negotiation completed in December 2015. In January 2017 and again in March, the DOE released statements communicating a delay in the effective date for the amended WICF Test Procedure Final Rule and, as a result, a corresponding delay in approving the negotiated energy conservation standards. In their communication, DOE committed to making an approval decision on the amended Final Rules by June 26, 2017.

On June 5, 2017, DOE released an approval statement for the WICF Test Procedure Final Rule and outlined the marking and reporting requirements for WICF components. An approval decision on the negotiated energy conservation standards for is still pending from DOE.



Rulemaking Frequently Asked Questions

The following Frequently Asked Questions summarize the requirements of the original rulemaking, the details of the settlement agreement, the open items related to the rulemaking and the impact of the settlement agreement has on the refrigeration industry and your business.

1. What is the Rulemaking?

On June 3, 2014 the Department of Energy (DOE) issued a final rule establishing energy conservation standards for **Walk-In Coolers and Freezers (WICF)** (10 CFR, Part 431, Docket Number EERE–2008–BT–STD–0015). Minimum efficiency levels for both the walk-in enclosure (doors and panels) and the associated refrigeration equipment were defined.

2. What is the scope of the Rulemaking?

The ruling includes enclosed walk-in coolers and freezers used for general storage which can be walked into, with a floor space of 3,000 ft² or less. The ruling also includes unit coolers used for walk-ins attached to multiplex refrigeration systems serving multiple refrigeration loads, as are frequently used in grocery stores.

3. What is the efficiency metric used by the DOE for WICF Refrigeration Systems?

The efficiency will be measured with the **Annual Walk-in Energy Factor (AWEF)**. AWEF is a measure of the annual efficiency of the refrigeration system and includes the impact of seasonal temperature changes as well as different WICF box loads. It is the ratio of annualized capacity divided by input power (BTUH/Watts).

4. How does the DOE define a Walk-in Cooler or Freezer?

DOE defines a Walk-in Cooler as enclosed storage spaces refrigerated to temperatures above 32°F (0°C). Walk-in Freezers are defined as enclosed storage spaces refrigerated to temperatures at or below 32 °F (0°C).

5. What refrigeration equipment/applications are not covered?

- Equipment intended solely for scientific, medical or research purposes.
- Condensing units solely designed and marketed to serve multiple WICFs or other pieces of refrigeration equipment (e.g., FlexPak).
- Water cooled condensing units or systems.
- WICF with floor space in excess of 3,000 ft².
- Compressorized racks that serve multiple refrigeration loads.
- Remote air-cooled condensers and fluid coolers not used for WICF.
- Reach-in units.



6. Why the need for the litigation?

In reviewing the original rulemaking, the refrigeration industry identified a number of technical and procedural errors in DOE's analyses that resulted in unreasonable and, in some equipment, unachievable minimum efficiency standards for refrigeration equipment.

On April 2, 2015, the refrigeration industry, including Lennox/Heatcraft, filed a legal challenge against DOE requesting the errors be corrected, new refrigeration efficiency standards be established and a new compliance date set.

7. What were the provisions of the settlement agreement?

On July 29, 2015, the DOE agreed to a settlement vacating portions of the original rulemaking related to refrigeration equipment standards and to work with the industry in defining new energy efficiency standards and a new enforcement date.

The key terms of the settlement are as follows:

- The four (4) refrigeration standards for condensing units and packaged systems operating at medium temperature (cooler) will remain at the original values, but will have their enforcement date delayed;
- The four (4) refrigeration standards for condensing units and packaged systems operating at low temperature (freezer) are vacated;
- The two (2) refrigeration standards for multiplex refrigeration systems (unit coolers) operating at medium (cooler) and low temperatures (freezer) are vacated; and
- DOE will convene a working group to negotiate the standards by January 22, 2016.

NOTE: The nine (9) efficiency standards the panels and doors used in walk-in coolers and freezers were not part of the settlement. As result, the original standards and compliance date of June 5, 2017 still applies for those components.

8. What does "vacating" of a rulemaking mean?

Vacating means the requirement to achieve the original minimum energy efficiency targets for the affected product categories by the original June 5, 2017 compliance date **is no longer in effect** and DOE is required to reestablish new minimum efficiency standards and compliance date.

9. What was the outcome of the refrigeration standard negotiation working group?

The negotiation working group, of which Heatcraft was a member, agreed to seven (7) new efficiency standards for refrigeration equipment.



The following table summarizes the currently proposed refrigeration equipment standard levels:

Product Type	Unit Capacity Range (Btuh)	AWEF Value (Btuh/W-h)
Dedicated CDU & Packaged Systems – Medium Temp Indoor	All	5.61
Dedicated CDU & Packaged Systems – Medium Temp Outdoor	All	7.60
Dedicated CDU & Packaged Systems – Low Temp Indoor	0 - 6,499	1.81 to 2.39
Dedicated CDU & Packaged Systems – Low Temp Indoor	6,500 +	2.4
Dedicated CDU & Packaged Systems – Low Temp Outdoor	0 - 6,499	2.73 to 3.14
Dedicated CDU & Packaged Systems – Low Temp Outdoor	6,500 +	3.15
Unit Cooler – Medium Temp	All	9.00
Unit Cooler – Low Temp	0 – 14,999	3.91 to 4.14
Unit Cooler – Low Temp	15,000 +	4.15

10. What are the next steps in the process?

The DOE needs to publish an approval statement regarding the negotiated energy conversation standards for low temperature (freezer) condensing units and packaged systems and both medium (cooler) and low temperature (freezer) unit coolers. It is expected that DOE will make the approval decision by June 26, 2017.

11. Given the current status of the rulemaking, what are the reporting and compliance dates for the refrigeration equipment standards?

Medium temperature (cooler) condensing units and packaged systems must comply with the reporting and marking requirements set forth in the amended Test Procedure Final Rule by June 26, 2017. AWEF values for these units are not required to meet the minimum values in the table above until January 1, 2020.

At this time, Low temperature (freezer) condensing units and packaged systems and all unit coolers are not required to be marked or meet the minimum AWEF values. The compliance date for these products to the marking and minimum efficiency standards will be three (3) years after DOE makes an approval decision and publishes the Final Rule. As the Final Energy Conservation Rule for these product classes has not been published, no date has been established. However, it is anticipated this date will be sometime in the middle of 2020.

The reason for the difference in reporting and compliance timelines for medium temperature condensing units and all other refrigeration systems is a direct result of the litigation settlement. Since the medium temperature condensing unit & packaged system energy conservation standards were not vacated, the original reporting timing of June 2017 remained in effect for those products.



12. Why don't medium temperature condensing units and packaged system need to meet the minimum efficiency standards until January 1, 2020?

DOE agreed to delay the compliance date for medium temperature condensing units and packaged systems to allow OEM's to more closely align product design changes with low temperature models.

13. What are the required refrigeration marking and reporting requirements?

All refrigeration equipment must be marked with the following information:

- AWEF Value
 - Format: XX.XX
- Application Compliance Statement
 - "This refrigeration system is designed and certified for use in walk-in (cooler and/or freezer) application."

Heatcraft will show the above information on the unit nameplate.

In addition to the equipment marking requirements, the AWEF Value and Compliance statement must also be shown on both published product literature and electronic product selection software.

Finally, all covered products must be listed in the DOE's Compliance & Certification Management System (CCMS) database which is publically available on the DOE website.

14. What does the statement "refrigeration system design and certified for use" mean?

The compliance statement is language mandated by the DOE WICF regulation. It is intended to provide an easy indication for customers, contractors, end users, etc. that a piece of refrigeration equipment meets the minimum DOE WICF requirements.

If a refrigeration unit, such as a medium temperature condensing unit, is designed and certified to operate in both a cooler (>32°F / 0°C) and freezer (≤32° / 0°) application, the compliance statement will contain both "cooler" and "freezer" in it. Units designed for only one temperature regime will only contain the applicable application descriptor in the compliance statement.

15. In the interim period where only refrigeration units applied in medium temperature/cooler applications require marking and reporting, can those units still be applied in freezer application?

Yes. If the refrigeration unit is designed to operate in both cooler and freezer applications, but is only marked that it is certified for use in a cooler, it can be applied as a freezer. The exemption will only be allowed until the low temperature (or freezer) DOE regulations go into effect.

16. What about the standards for WICF doors and panels?

The WICF standards for doors and panels are not affected by this settlement and must be compliant by the original date of June 5, 2017.



17. When the new ruling gets finalized and goes into effect what are my responsibilities as wholesaler or installing contractor?

The DOE requires that the equipment manufacturer certify to DOE all equipment meeting the minimum efficiency regulations. The individual who selects or installs this equipment must only use equipment which has been certified compliant by the DOE.

18. Does this regulation impact replacement equipment?

Yes, it will impact all equipment manufactured on or after the new enforcement date for both new and replacement applications.

19. Does the DOE ruling impact cold storage applications?

The DOE ruling only applies to WICF with a floor space of 3,000 ft² or less. Cold storage applications with floor space of 3,000 ft² or less will require compliant products. Cold storage applications with a floor space in excess of 3,000 ft² will not be impacted.

20. How will the DOE ruling impact the cost of products I purchase?

It is too early to predict. Heatcraft will focus on minimizing the cost impact while still attaining the DOE minimum efficiency levels.

21. Is the ruling based on the date of sale, installation or date of manufacture?

The ruling is based on the date of equipment manufacture. All products manufactured after the compliance date must comply with the minimum energy efficiency standards.

22. I am based outside the US and buy directly from Heatcraft. Will this impact what I buy?

The DOE ruling only impacts products sold in or imported into the United States. As such, products sold to Canada, Mexico, Latin America or other regions outside of the United States are not required to comply with the DOE ruling. However, Natural Resources Canada (NRCAN) has published a proposed efficiency rulemaking that will establish minimum efficiency standards for Walk-In Cooler & Freezers that align with the DOE regulation.

23. How do we determine the energy efficiency on a field built system?

- For systems that are selected as independently matched condensing units and unit coolers, the DOE WICF efficiency standard allows for certification of the unit cooler and condensing unit as independent components of a refrigeration system.
- Each model of unit cooler and condensing unit impacted by the standard must meet the minimum AWEF standard to be used in the covered applications.



- The manufacturer is responsible for the equipment's AWEF certification.
- The AWEF value is an indication of the unit efficiency level under a specific set of test conditions. It is to be used as a comparison of efficiency across different models and is not intended to reflect the actual efficiency performance of a unit/system.
- The appropriateness of the match of the field built system will be the responsibility of the contractor/distributor just as it is today.

24. Do the standards require a matched unit cooler and condensing unit selection with a specified expansion device?

- No, the DOE standard only stipulates that the impacted unit cooler and condensing units have manufacturer's AWEF certification. The standard does not require a specific expansion device for certification.
- The control scheme of the condensing unit (reduced head pressure for example) may require changes in how the expansion device is sized or the style of expansion device.

25. How do we evaluate efficiency on a system with variable operating conditions and varying load?

- The AWEF calculation for outdoor equipment is based on an average range of ambient conditions (i.e., bin data) as prescribed by DOE.
- Indoor equipment is rated at typical indoor rating points as specified in the WICF standard.

26. Does the new DOE WICF standard require moving to a packaged system?

- While packaged systems used in walk-ins are covered by the standard and would be evaluated as a pre-matched system, the DOE standard does not mandate use of packaged systems. The standard allows for use of split systems with separate unit coolers and condensing units that meet the minimum AWEF values.
- The AWEF calculation is similar for independent components, and there is no AWEF advantage to preselecting matched or packaged systems versus rating them as individual components.

27. Does the new DOE WICF standard require the use of specific refrigerants?

- No. Any approved refrigerant for an application may be used. If refrigeration system components are approved for more than one refrigerant, the AWEF ratings listed on the unit, in the product literature or the CCMS data apply to the listed refrigerants.

Heatcraft strongly encourages all customers and concerned parties to become familiar with the rulemaking to better understand the potential impact on your business. For additional details and updates on the rulemaking and settlement agreement, please see the US Department of Energy's Appliance and Efficiency regulation website for Walk-In Coolers & Freezers:

http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/26