

U.S. Regulatory Guide for HVAC

Edition: January 2023



**New and Upcoming
Efficiency and
Refrigerant
Standards**

STAYING ON TOP OF RECENT REGULATORY CHANGES

The regulation of energy efficiency and emissions continues to spur change in the HVAC industry. These changing requirements present a unique challenge for our industry, but one we're ready to meet.

M1 EFFICIENCY

On January 1, 2023, significant increases in energy efficiency criteria and ratings as determined by the U.S. Department of Energy (DOE) went into effect for residential and commercial equipment throughout the U.S. See [page 2](#) for more details.

SPVU EFFICIENCY METRIC & TESTING PROCEDURE

Also on January 1, 2023, AHRI Standard 390 for Performance Rating of Single Package Vertical Air-Conditioners and Heat Pumps (SPVU and SPVH) will be switching efficiency metrics from the EER (Energy Efficiency Rating) standard to a IEER (Integrated Energy Efficiency Rating) and moving to a new testing procedure. Friedrich will be keeping an eye on this changing situation and will update this document as more information becomes available. See [page 3](#) for more details.

HYDROFLUOROCARBON PHASEDOWN

Also going into effect at the beginning of the year was a phasedown of hydrofluorocarbon (HFC) refrigerants enacted by the California Air Resources Board (CARB). CARB mandated a transition to lower global warming potential (GWP) refrigerants for HVAC equipment manufactured on January 1, 2023, or later. And beginning in 2025, the rest of the country will follow suit. See [page 4](#) for more details.



KEEPING YOU READY FOR WHAT'S NEXT

Regardless of the regulatory challenges, we continue to innovate and deliver Friedrich® products that not only meet or exceed requirements but offer the performance and ease of installation that the industry has come to expect. We are a leading influencer on industry regulatory issues and are committed to keeping you continually informed and prepared.

Summary of upcoming regulatory impacts on Friedrich products

TIMING	CATEGORY	DESCRIPTION	FRIEDRICH PRODUCTS IMPACTED
2023	M1 Efficiency & Rating Changes*	DOE is changing minimum efficiency levels for unitary equipment	DSS / VRP
	SPVU Change*	AHRI is re-categorizing products and modifying test procedures for AHRI 390	VPAK
	CARB A2L Refrigerant Change	CARB is requiring lower-GWP refrigerant in certain product categories as of January 1, 2023	RAC / PTAC / PAC / DEH (New compliant models available)
2025	Federal A2L Refrigerant Change	The federal government will require lower-GWP refrigerant in all products nationwide beginning January 1, 2025	All
All above changes allow product manufactured prior to the new standard implementation date to be sold through indefinitely for Friedrich product categories			

*Existing models comply with new regulations. No model number changes planned, and in keeping with its policy of continuous improvement, Friedrich reserves the right to make changes without notice.



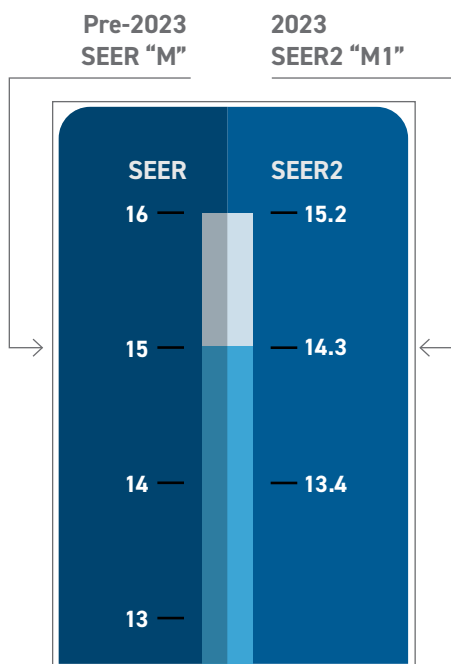
2023 MINIMUM EFFICIENCY STANDARDS FOR M1 PRODUCTS

The next set of DOE energy efficiency increases impacts newly manufactured residential and commercial equipment and went into effect on January 1, 2023.

For single-phase residential and light commercial heat pumps, there is one new standard that applies nationally. With only heat pump products that must comply to M1 standards, Friedrich® conforms to the national standards as reflected to the right. Compliance is based on date of manufacture, so heat pumps manufactured prior to 2023 can continue to be sold.

NATIONAL STANDARDS		
PRODUCT CATEGORY	2023 Efficiency Requirements Using Appendix M1	
	SEER2	HSPF2
SPLIT HP	14.3	7.5
SINGLE PACKAGED HP	13.4	6.7

NOTE: The Split HP in the above table applies to system matchups and not individual components. Consult the AHRI directory for the most current matchups.



APPENDIX M1: A NEW SYSTEM OF MEASUREMENT

For equipment manufactured after January 1, 2023, not only are the minimum standards changing but a new test procedure will be required. This new test method is commonly referred to as Appendix M1, replacing Appendix M in the Code of Federal Regulations. For decades, we've used the classic metrics of SEER, EER and HSPF. Going forward, you'll hear these metrics referred to as SEER2, EER2 and HSPF2.

Why is the metric changing?

The DOE test procedure has been updated to be more representative of installations in today's homes and will be used to determine product ratings. This new system of measurement will apply to all single-phase air conditioners and heat pumps <65k BTU/HR.

HOW THE U.S. GOVERNMENT WILL ENSURE COMPLIANCE

The DOE may impose stiff penalties for violators of the new regulations. For both contractors and distributors, it is unlawful to knowingly sell or install non-compliant equipment. If either contractors or distributors are found to be routinely doing so, they may be prohibited from purchasing any of the covered classes of equipment. If a customer believes their contractor has installed an illegal air conditioner, they may report it to the DOE at EnergyEfficiencyEnforcement@doe.gov or 202.287.6997

Learn more at <https://www.energy.gov/gc/office-assistant-general-counsel-enforcement>.

NOTE: The information provided does not, and is not intended to, constitute legal advice; instead, all information and content are for general informational purposes only.

CONTRACTORS	DISTRIBUTORS
If contractors install equipment that doesn't meet the new standards, they will be required to cover all costs associated with replacing the equipment, and they may be subject to additional DOE penalties	If distributors knowingly supply non-compliant equipment to contractors, they may be subject to the same enforcement, plus a per-unit monetary penalty
Repeat offenders may be placed on a national do-not-sell registry	



2023 CATEGORY CHANGE FOR SINGLE PACKAGED VERTICAL UNITS

For single packaged vertical air conditioners and single packaged vertical heat pumps, collectively known as SPVUs, the DOE incorporated the most recent version of the relevant industry test standard, AHRI 390-2020, and amended certain provisions for representations of SPVUs.

The DOE established definitions for single-phase single packaged vertical air conditioners with a cooling capacity of less than 65,000 BTU/HR and for single-phase single packaged vertical heat pumps with a cooling capacity of less than 65,000 BTU/HR to distinguish that equipment from certain residential central air conditioners and heat pumps.

While in effect as of January 6, 2023, these final rule changes will be mandatory for product testing starting December 4, 2023.

Since full load represents about 2% of actual run times, Integrated Energy Efficiency Ratio (IEER) was recently developed to address the actual efficiency of HVAC equipment that operates at different load levels. This ratio accounts for both full load and part load efficiencies. It does so by weighting EER values at different load capacities and adding them together. The IEER weightings in the formula are based on the approximate number of hours a unit spends at each load point throughout its life.



2023 REFRIGERANT CHANGE (CALIFORNIA)

HIGH-GWP REFRIGERANT PHASE OUT

For products sold in California, the California Air Resources Board (CARB) has mandated a switch to refrigerant with <750 GWP for room air conditioning products. That means in California, R-410A, with a GWP of 2,088, can no longer be used in products manufactured on or after January 1, 2023. The most common low-GWP alternatives to R-410A are classified by ASHRAE as mildly flammable, or A2L. Friedrich® has opted to use R-32.

The CARB rules apply to:

- Window / Through-The-Wall Room Air Conditioners
- Packaged terminal air conditioners (PTACs) and packaged terminal heat pumps (PTHPs)
- Residential dehumidifiers
- Portable air conditioners
- Ducted central air conditioners and heat pumps
- Non-ducted air conditioners and heat pumps (both mini- and multi-splits)
- Packaged rooftop units
- Water-source and ground-source heat pumps
- Other dehumidifiers

Please [click here](#) for a list of all R-32 Friedrich models available in 2023, complying with CARB standards.

ON THE HORIZON FOR 2025 – NATIONWIDE REFRIGERANT CHANGE

TAKING AIM AT HFCs

In 2020, a bipartisan senate bill known as the American Innovation and Manufacturing (AIM) Act was enacted into law. It authorizes a 15-year phasedown of hydrofluorocarbons (HFCs) across a variety of applications, including HVAC. The bill gives the U.S. EPA the authority to prescribe the HFC phasedown, with rulemaking underway.

Like what is currently in effect in California as detailed above, when the EPA takes the expected action of setting a 750 GWP limit for air conditioning in 2025, it means that R-410A will no longer be able to be used in HVAC equipment manufactured after the compliance date. Due to their mildly flammable characteristics, A2L refrigerants require updates to standards and building codes to allow for their safe installation. As a leading influencer on regulatory issues, we are actively involved in the discussions and will continually keep you informed and prepared.

ASHRAE Standard 34 Safety Groups

Higher Flammability	A3 Propane, Butane	B3
	A2	B2
Lower Flammability	A2L R-454B R-32	B2L Ammonia
	A1 R-410A	B1 R-123, S02
No Flame Propagation		
	Lower Toxicity	Higher Toxicity

↑ Increasing Flammability

→ Increasing Toxicity



WHY CHOOSE FRIEDRICH®?

Rather than viewing the regulatory changes as a problem to be solved, we are embracing them as an opportunity to innovate with new technologies and connected solutions to create an even better product line for the contractor and the consumer.



FRIEDRICH

Stay informed and learn more at www.friedrich.com/cool-topics

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In keeping with its policy of continuous progress and program improvement, Friedrich® reserves the right to make changes without notice.