

Decoding heat pump certification

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Heat pump certification has evolved into a powerful tool for building trust in performance data. Across Europe, the “big five” certification schemes include Eurovent Certified Performance for Chillers and Heat Pumps (LCP-HP), Eurovent Certified Performance for Heat Pumps (Eurovent-HP), NF 414, Heat Pump KEYMARK (HPKM) and MCS for Heat Pumps (007).

However, in a European market flooded with different heat pump technologies, manufacturers, brands and certification marks, it can be difficult to distinguish between schemes or decipher why a product is certified under some marks, but not others, or not certified at all. In a bid for answers, we spoke to Europe’s leading certifier of HVACR products, Eurovent Certification, about the heat pump sector and the different schemes available.

How to measure performance

There are three main approaches to measuring product performance data.

1. Self-declared data

When manufacturers self-declare data, they take full responsibility for reporting product performance. The data is usually supported by in-house testing. There is no automatic third-party check of data - unless authorities or market surveillance bodies intervene.

Benefits: Self-declaration keeps costs low and gives manufacturers full control over product selection, testing and reporting. This can reduce product costs, as no additional verification expenses are passed on at the point of sale.

Limitations: Regulations such as Ecodesign require that declarations be supported by evidence. However, in practice, the depth and quality of that evidence can vary. When products are selected and tested internally, and manufacturers choose which results to publish, there is a risk of bias. Additionally, variations in testing environments, equipment, calibration, tolerances or methodologies between manufacturers may make comparison between products more difficult.

2. Independent laboratory data

Manufacturers may choose to validate product performance through testing conducted by an independent third-party laboratory.

Benefits: Independent testing improves credibility and objectivity compared with in-house testing alone. Third-party laboratories follow recognised standards and operate under controlled, repeatable conditions, reducing the likelihood of optimistic assumptions.

Limitations: Laboratory testing generally represents a performance snapshot of the selected product, to conditions requested by the manufacturer. It does not normally include ongoing surveillance. Because manufacturers provide the tested products, there is also no guarantee the tested unit reflects typical production.

In addition, not all laboratories are accredited to the internationally recognised ISO 17025 standard for reliable testing and calibration competence.

3. Certified data assessed on basis of Technical Certification Rules laid down in publicly available certification guides

Certification provides a comprehensive evaluation of product performance. While independent, ISO 17025 standard laboratory testing remains central, certification schemes may also include verification of technical documentation, software audits, factory audits and ongoing surveillance. Certified data is typically published, allowing transparent comparison between products.

Certification can also reduce bias. For example, Eurovent Certification selects the products for testing and manages the process so that manufacturers and the laboratory have no direct contact. Products under Eurovent heat pump schemes are also evaluated across different operating conditions to better reflect real-world use in different climates and applications.

Benefits: Certification provides robust, independently verified performance data, helping build market confidence and supporting manufacturer quality control processes. It helps drive product quality upwards by providing a single reliable comparison basis across different manufacturers and even countries.

Limitations: Certification is voluntary and requires manufacturers to invest time and resources in a rigorous verification process. These additional costs reflect the added assurance that performance claims have been independently verified.

Why the distinction matters in practice

The performance data that forms the basis for ErP labels, data sheets and marketing materials is a legal obligation under Ecodesign. For consultants, installers and clients, the difference between self-declared, laboratory tested and certified data affects:

- Design calculations and energy models: certified SCOP or capacity values reduce the risk that buildings miss energy or comfort targets.
- Noise and planning compliance: certified sound power levels help demonstrate compliance with local regulations and avoid post installation disputes.
- Contractual obligations: specifying “Eurovent certified” or “KEYMARK certified” performance can make performance guarantees enforceable by anchoring them to an independent reference.

Additionally, as heating systems electrify and heat pumps replace gas boilers, certified performance data becomes essential to accurately predict long-term operating costs.

Table 1. Summary of certification vs laboratory testing vs in-house evaluation.

	In-house laboratory testing	Independent laboratory testing	Eurovent heat pump Certification programmes
Independent from manufacturer	No	Yes	Yes
Testing process outside of manufacturer control	No	Yes	Yes
Standardised testing procedure	No	Yes	Yes
Laboratories must be assessed according to ISO 17025 standard	No	Not always	Yes
Manufacturer and laboratory contact limited	No	No	Yes
Products selected independently	No	No	Yes
Third party factory audits to ensure production line quality	No	No	Yes
Free to access product database containing standardised data	No	No	Yes
Ongoing independent surveillance process	No	No	Yes

Types of heat pump certification programmes

While different heat pump certifications cover different heat pump types and markets, all share the common aim of turning manufacturer claims into independently verified, comparable data.

Why a heat pump may not be certified

Despite the growing importance of third-party marks, many heat pumps sold in Europe may not be certified. The reasons are varied and not always negative.

Commercial and strategic considerations

Some manufacturers, particularly smaller ones, may decide not to pursue certification for certain ranges because:

- Certification includes costs (testing, audits, internal resources) that budget-conscious manufacturers may wish to avoid - especially if they have large portfolios with frequent design changes.
- Target markets may not demand certification; for example, in regions or segments where incentives and major clients do not require specific marks, the commercial benefit may seem limited.
- New or niche products might be launched first with self-declared data, with certification planned only once sales volumes justify the investment, or after product optimisation.

In these cases, absence of a mark may reflect a strategic choice about where to allocate budget and effort.

Table 2. Summary of different European heat pump schemes offered by Eurovent Certification.

	Eurovent LCP-HP	EuroventHP	NF 414	KEYMARK (HPKM)	MCS 007
Market	Europe and worldwide	Europe and worldwide	France	Europe	United Kingdom
Application	Residential, commercial and industrial	Residential and light commercial	Residential and light commercial	Residential and commercial	Residential
Product type (scope)	Liquid chilling packages and Hydronic heat pumps with electrically driven compressors.	Electrically driven, gas absorption and gas internal / external combustion engine driven heat pumps with a heating capacity less than or equal to 100 kW.	Electrically driven, gas absorption and gas internal / external combustion engine driven heat pumps with a heating capacity less than or equal to 100 kW.	All heat pumps, combination heat pumps and hot water heaters as covered by Ecodesign, EU Regulation 813/2013 and 814/2013.	Electrically driven and gas absorption heat pumps up to a 45kW output.
Purpose of the certification	Independent verification of performance metrics (SCOP, SEER, SEPR, η_s , η_{sc} etc.) across a range of test conditions. Used widely in design/specification as proof of product performance.	Independent verification of performance metrics (SCOP, SEER, SEPR, η_s , η_{sc} etc.) across a range of test conditions. Used widely in design/specification as proof of product performance.	Focused on space-heating/cooling performance and reliability. Recognised as a quality label in France. Can be linked to eligibility for certain support schemes and tax benefits to demonstrate energy savings.	Provides a single panEuropean mark verifying Ecodesign relevant performance (efficiency, capacity, etc.) and confirms ongoing compliance with European regulations.	Demonstrate that heat pump products meet specified UK performance, safety and emissions requirements, and links certified performance (e.g. SCOP thresholds) directly to grant eligibility for the Boiler Upgrade Scheme.
Regulatory focus	Aligned with EN standards, Ecodesign (ErP) metrics and International Standards. Used to support compliance also outside EU (e.g. Middle East or India).	Aligned with EU test standards and ErP metrics. Used to support compliance.	Confirms conformity with French and European Standards.	Explicitly aligned with EU Ecodesign Lots 1 & 2. Widely accepted as proof of compliance.	Transposes Ecodesign requirements.

Technical and scope limitations

Some products simply fall outside the scope of the main schemes. For example:

- Heat pumps above the capacity limits (e.g. >400 kW for KEYMARK, >100 kW for NF 414) or with unusual configurations may not be eligible under existing programmes.
- Innovative technologies using new refrigerants, hybrid layouts or control concepts may need the schemes to update their rules before they can be covered.

Until programmes evolve, such products can only rely on self-declared data or bespoke third-party laboratory testing arrangements, even if their performance is excellent.

Performance, compliance and transparency issues

In some cases, non-certification may be down to product performance:

- A manufacturer may not be confident that all products meet the entry criteria, or that they will pass the additional layers of evaluations such as the factory audit.

- Manufacturers whose test results are inconsistent may struggle to meet the demands of the surveillance process.
- Some brands may prefer not to submit products to independent testing because they fear that certified values will be lower than existing marketing claims.

From a market perspective, it is too simplistic to say “certified equals good, non-certified equals bad”. However, if a product is not certified, you should always ask why.

Conclusion

As Europe tightens efficiency and climate requirements, and cost-conscious users aim to see a return on investment, the trend is clearly towards wider reliance on certified performance data as standard practice rather than an optional extra. Certification provides robust, accurate, comparable data on which to make good product decisions. Used well, Eurovent Certified Performance, NF 414, KEYMARK and MCS give the European heat pump market a common language of trusted data – reducing the gap between product claims and installed reality.

Find out more at www.eurovent-certification.com ■