

Certified Performance Database as a tool for quality and compliance



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The fields of Heating, Ventilation, Air-Conditioning and Refrigeration (HVAC&R) have been experiencing a very challenging regulatory and normative background in the past years. In this context it is often hard for manufacturers, consultancies and end-users to have a clear view of the quality and compliance of HVAC&R components, products and systems. The Eurovent Certified Performance (ECP) certification has been used for now more than 20 years to provide guidance on the real performance of HVAC products in the European market.

Third party certification of HVAC&R products and systems

The Eurovent Certified Performance (ECP) certification is a voluntary, third party certification managed and accredited according to the ISO 17065 requirements (COFRAC accreditation n°5-0517, international recognition EA/IAF). Accreditation is a proof for independence and competence. It also ensures that all manufacturers are allowed to have their products certified without any restriction providing that the products fulfil the requirements given in the certification reference documents which are freely and publicly available.

The certification process is based on continuous (yearly) verifications based on tests by independent accredited laboratories, factory audits and check of selection software.

As of today the ECP mark covers 19 certification programmes in all fields of HVAC&R. It covers residential, tertiary and industrial products from the residential air conditioners to the industrial chillers. More than 1,300 tests, 160 factory audits and 100 checks of selection software are carried out every year.

European database of certified performance for HVAC&R components, products and systems

All certified references and performances are listed in an online directory freely available (www.eurovent-certification.com). This directory gathers more than 300 certified trademarks and more than 50,000 references.

For each product category characteristics and certified performances are listed according to the same data structure and the latest European and international standards. This allows finding and comparing the certified data easily and with the assurance that the data have been checked.

Example of use

The availability of such database allow to get reliable and exhaustive set of performances which can be used to assess some trends of the market over time.

As an example the evolution of the energy efficiency of Fan Coil units can be seen in the **Figure 1** below. A Eurovent energy efficiency classification was created in 2011 for these products based on their average energy consumption at three different speeds¹. It can be seen that there is a clear trend towards better energy efficiency as the energy classes are moving from classes E and D to C, B and A.

¹ For a detailed description of the Eurovent energy efficiency classification for Fan Coils units see RS 6/C/002-2015 and RS 6/C/002A-2015 available at www.eurovent-certification.com

Another example can be found regarding the energy efficiency of air filters. For these products a Eurovent energy classification has been put in place since 2012. This classification is based on the estimated annual energy consumption derived from the average pressure drop of the filter². A more classical way to assess the energy consumption of an air filter is to look at its initial pressure drop. The **Figure 2** below shows the evolution of both the mean initial pressure drop and the mean annual energy consumption for the certified F7 bag filters of a constant panel of manufacturers between 2011 and 2015.

Unlike what has been seen for Fan Coil Units the evolution of the mean energy efficiency is not linear during this period: the energy consumption and the initial pressure drop increases to reach a maximum in 2013 and then it decreases until 2015. This behaviour can be explained knowing the standardization context behind. A revised version of the European testing standard was introduced in 2012 and applied in the Eurovent certification programme first in 2013. This revised version introduced stricter requirements for F7 filters related to the discharge efficiency (see EN 779:2012). In order to fulfil this new requirement European manufacturers had to improve the filter media in order to increase the filtration efficiency. As a consequence the mean pressure drop of the filters increased. After the introduction of the new standard the pressure drop started to decrease as manufacturers are seeking to propose to their customers more energy efficient products.

Other use of certified performance database

Database of certified data can be used in many instances: tax incentives, national implementation of EPBD, building energy labels, green public procurements, white certificates. As certified performances provide confidence in the quality and the compliance of the products they can be required in voluntary schemes (e.g. building energy labels, green public procurements, white certificates) or being considered with an advantage over non certified products in regulatory schemes (e.g. national implementation of EPBD).

Example of such use can be found in the French Building energy efficiency calculation method which applies a penalty for non-certified heat-pumps and air to air heat exchangers. Consultancies use approved software in order to assess the compliance of a building

² For a detailed description of the Eurovent energy efficiency classification for Air Filters see RS 4/C/001-2015 available at www.eurovent-certification.com

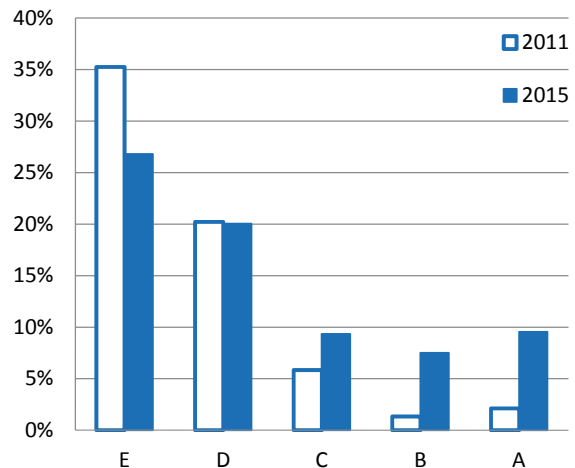


Figure 1. Evolution of the distribution of the energy efficiency class for Fan Coil units between 2011 and 2015.

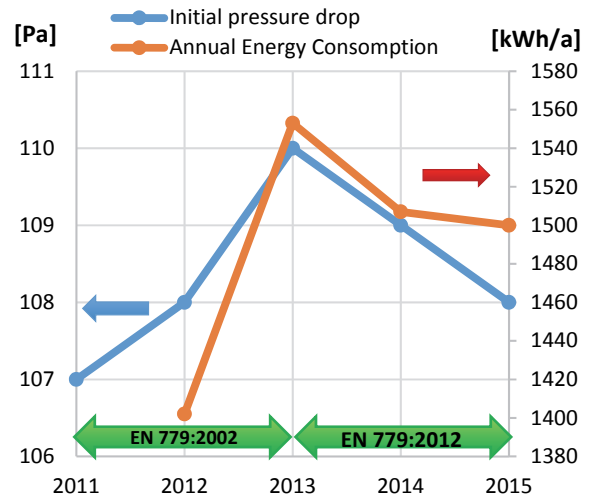


Figure 2. Evolution of the energy efficiency for F7 bag filters between 2011 and 2015.

with the French EPB regulation (RT 2012). This software is linked to database of products which are fed directly with Eurovent certified performance data.

Conclusion

The challenging normative and regulatory background in the fields of HVAC&R induces a complex environment. Assessing the quality and compliance of products is therefore more and more difficult for end-users. In this context the Eurovent Certified Performance online directory provides an easy and straightforward way to get up to date, trustful and exhaustive data. Such information can be (and are already) used in various voluntary and regulatory compliance schemes. ■