

NEx

Nature of Excellence by Eurovent

– A new certification scheme

The demand of top quality products grows up more and more every day. Nowadays buildings designer doesn't only focus on the actual performance when they select an HVAC&R (Heating Ventilation Air-conditioning and Refrigeration) product for their projects, key elements such as durability, maintenance, controls, etc. are also considered. Currently many manufacturers of the HVAC&R market propose such products but no label/certification are in place to recognize them as such.

It is the case of Air Handling Units (AHU) where reaching high performances is important but is not the only element to define a high-quality product. Today's AHUs provide so much more than just good performances.

NEx - Nature of Excellence by Eurovent

It's within this context that in 2017 Eurovent Certita Certification launched a brand-new mark to certify top rated products called NEx (Nature of Excellence). Proposing to the market a Eurovent NEx certified product and certificate is a testimony of the company capability of producing top in class rated product with awareness and carefulness towards environments, social and corporate governance. This is an added value to manufacturing company, but also to project/companies investing in Eurovent NEx certified product designed, engineered and integrated systems.

The first certification scheme developed under the NEx mark is for Air Handling Units. The aim of this certification



QUENTIN LIEBENS

Project Development Manager
Eurovent Certita Certification

scheme is to cover key topics such as durability, high product performance, recyclability, energy efficiency and many other criteria which define a high-quality product. The list of elements to define the quality of a product will never be exhaustive thanks to the evolution of the technologies and the end user demand. However, several elements are already essential and must be considered to define a top-rated product.

Durability of the products

The durability of a product is its ability to maintain its functions and performances over its life cycle. Lifetime of a product is fundamental, several elements influence the lifetime starting from the design of the product, typically:

- Design for reliability and robustness in order to assure that the product will not be easily broken or damaged.
- Design for repair and maintenance in order to ease the maintainability of the product and therefore ensure good performances through the years.

A product of quality is a product which last in the time. In the case of an AHU the selection of the material, whether it is a metallic or a non-metallic material is important, more specifically it must be resistant to

the corrosion which could significantly decrease the lifetime of the product. Regarding the maintenance an AHU must be easily accessible for cleaning and for potential interventions on the components or alternatively easily removable component is preferable.

All those elements are covered by the NEx certification scheme in order to assure a durable product.

Recycle Ability

The notion of recycling can be complex when we talk about HVAC&R products. The European WEEE (Waste Electrical and Electronic Equipment) directive encourage the manufacturers of electrical and electronic products to take in charge the recycling of their products when their life come to an end. Only few products of the HVAC&R world come under the scope defined in the WEEE directive and an AHU is not one of them. However, this directive includes several elements applicable for AHU, although it seems complex to ask to a manufacturer to be in charge of the recycling of the product he sold due to the long life of the product, the end user can be informed of what can be recycled in the unit and how as a minimum. This would be a good starting point to move forward in the world of the recycling.

Controls of an Air Handling Unit and its integration in a ventilation system

Most of the time an AHU is made to be integrated in a building as part of a ventilation system, ensuring its good integration and connectivity to the Building Management System (BMS) is a proof of quality. A unit properly controlled will provide the best of its capacity. To do so the connection shall be easy, we can talk here about a “plug and play” unit meaning that an electrical cabinet is delivered by the manufacturer itself with the unit.

The future is in the digital technologies, BIM (Building Information Modelling) is more and more used in building design and the HVAC&R products don't escape to the rule. Proposing a BIM file for an AHU is a clear added value, this ensures a proper integration of the unit in the design of the building and help for tomorrow's maintenance and commissioning, two elements which contribute to the durability of the product.

High performance of an Air Handling unit

Reaching a high performance is crucial and mostly requested by the building designers. The Eurovent

Certified Performance (ECP) mark ensure the reliance of the certified product but cannot guarantee a high performance where the NEx certification set up thresholds for every certified performance of the model box and some of the real unit, as shown in the table below.

| | Model Box | Real Unit |
|--|-----------|-----------|
| Casing Strength (CS) | D1(M) | D2(R) |
| Casing Air Leakage (CAL) | L1(M) | L2(R) |
| Filter Bypass Leakage (FBL) | F9(M) | F9(R) |
| Thermal Transmittance of the Casing (TT) | T2 | - |
| Thermal Bridging Factor (TBF) | TB2 | - |

With regard to energy efficiency Eurovent Certita Certification released in 2016 an update of its Energy Efficiency labelling for AHU. Interrelationships to evaluate the energy efficiency of AHU are complex and even depend on climate conditions, with one single letter going from E to A+ the energy efficiency labelling for AHU represents balanced effects of air velocity in the fan section, heat recovery efficiency and pressure drop and fan efficiency.



The NEx certification scheme for AHU highlights energy efficient product by requiring only A and A+ air handling units, indeed a product of quality is a product which perform well with the minimum of energy consumed.

With all its requirements assuring a high-quality product the NEx (Nature of Excellence) certification is the perfect association of the ECP (Eurovent Certified Performance) certification. Whether you are a project manager, an architect, a contractor or an engineering consultant the combination of the two certification schemes will ensure you the selection of top rated products. ■