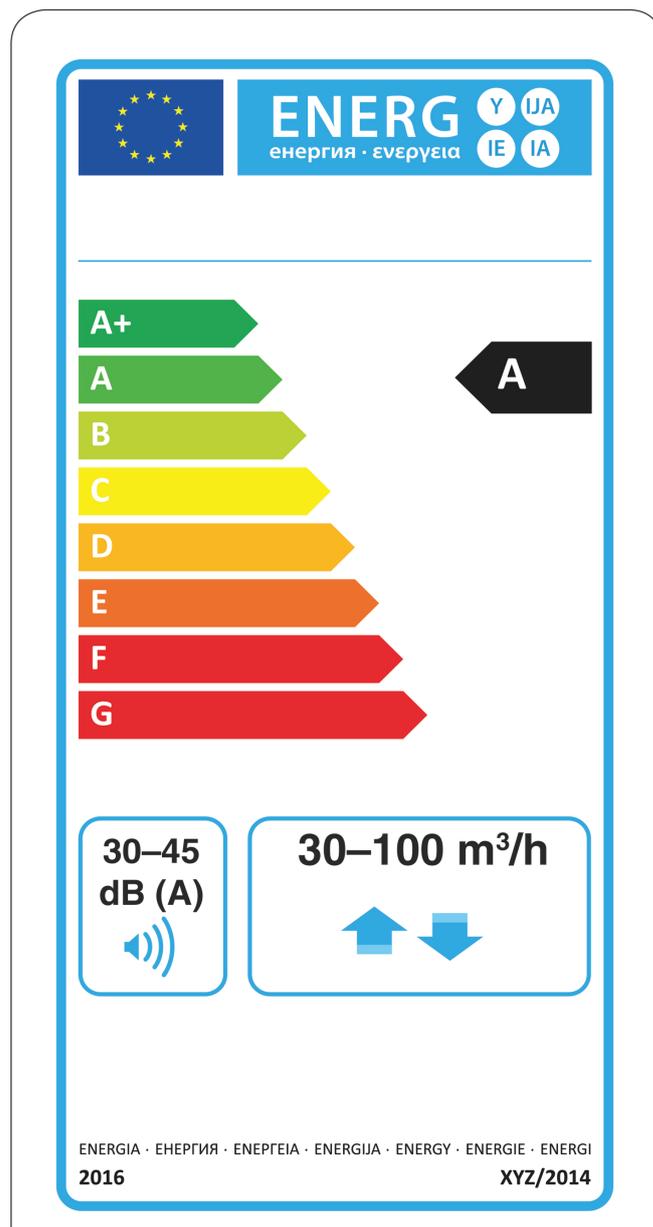


INDEPENDENT COMPARISON OF VENTILATION SYSTEMS FOR RESIDENTIAL BUILDINGS

Since 2012, anyone looking to buy a modern ventilation system in Switzerland can inform themselves about energy efficiency and other features of comfort ventilation systems on the market at www.deklariert.ch. This internet comparison portal has been extensively revised at the beginning of 2017. The portal is now closely aligned with the EU energy label for comfort ventilation systems, but also offers valuable additional information on the quality features 'hygiene' and 'acoustics.'

For the last five years, builders, architects and building technology planners have been able to find important features of the comfort air ventilators marketed in Switzerland on the web platform www.deklariert.ch. This comparison tool – known as the 'Deklaration Komfortlüftung' ('Comfort Ventilation Declaration') – has become well established in the industry in recent years. At the end of 2016, 17 ventilation systems from eight suppliers for single-family and small multi-family houses (<600 m³ / h) were listed on the portal. Depending on the efficiency of the heat recovery and the power demand of the fan, the units are divided into seven efficiency classes (A to G). In addition, each system is also assigned to one of seven classes in terms of hygiene (quality of the built-in filter) and acoustics (sound / noise emissions).



In 2016 the EU introduced an energy label for comfort ventilation, which was adopted by Switzerland on August 1st 2016 for use on a voluntary basis. After August 1st 2017, the EU label will become compulsory. Source: EU

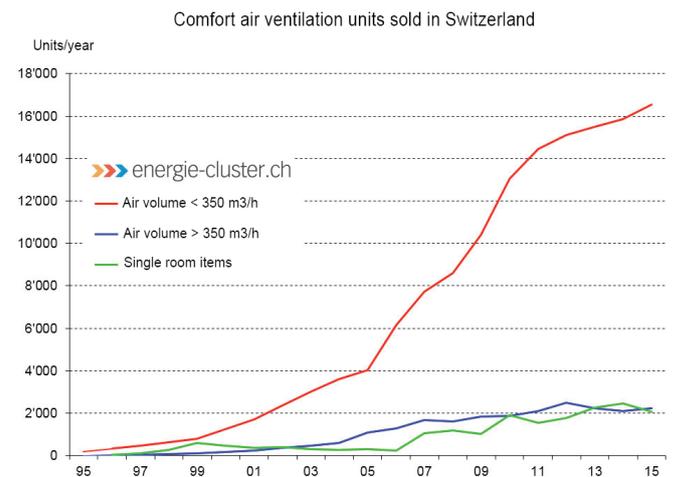
The 'Deklaration Komfortlüftung' was initiated by a broad-based innovation group under the umbrella of energie-cluster.ch, a network of some 50 companies and universities, which promotes the transfer of technology and know-how to energy efficiency. The 'Deklaration' was developed under the close cooperation of the system providers and producers, the Lucerne University of Applied Sciences and the Swiss Federal Office of Energy. The form of a comparative portal on the Internet was then deliberately preferred to the labeling of individual devices. The direct comparison on the Internet enables a transparent comparison of the devices and corresponds to the project sequence of the planners and builders.

Switzerland Adopts Efficiency Categories from the EU

The European Union has also sought greater transparency in the energy efficiency of comfort ventilation systems: at the beginning of 2016, the EU government introduced an energy label for comfort ventilation systems, similar to those of other electrical appliances such as washing machines, dishwashers or coffee makers. The EU energy label for comfort ventilation



Comfort ventilation ensures good air quality in air-conditioned and wind-tight buildings. Photo: Hoval



Over the past 10 years, the annual sales of small comfort air ventilation units (<350 m³ / h) has risen sharply in Switzerland. Graphic: energie-cluster.ch

equipment was adopted by Switzerland on August 1st 2016. This calls on manufacturers, importers and traders to place these energy labels on their comfort ventilation devices, and also to use them in brochures and other marketing channels. Until now, the use of energy labels in Switzerland has been voluntary. However, all comfort ventilation devices including those sold in Switzerland must also be labeled with the EU Energy Label by July 31, 2017.

"The EU energy label is a good approach, but we are not very happy with the current version of the EU energy label for ventilation equipment in Switzerland," says Beat Nussbaumer, head of the above-mentioned innovation group of energie-cluster.ch and member of the management board at the energy and building technology company Dr. Eicher + Pauli AG. The efficiency classes are more broadly defined in the EU energy label than was previously the case in the 'Deklaration Komfortlüftung'. "The new definition leads to a consolidation of the efficiency classes C to A into a single Group A and even A+. With the EU energy label, it is less clear which ventilation systems really have very good energy efficiency, as important factors have been removed," says Beat Nussbaumer. The Swiss building technology expert, however, is now banking on the fact that the EU energy classes will be refined in the future (as it is already planned) in order to further improve the meaningfulness of the labels.

EVERY THIRD NEW BUILDING TODAY USES COMFORT VENTILATION

Through open windows a lot of energy is blown out from heated buildings into the environment. In order to avoid this, new buildings and renovated buildings must be built air- and windtight according to the newest building standards and according to laws governing energy usage. This reduces natural air exchange. Consequently the planners must devise a ventilation concept that provides sufficient fresh air. A comfort ventilation system also ensures that building damage (mold) can not occur due to excessive humidity in the rooms. Because of such advantages, comfort ventilation systems have become the silver bullet for ventilation concepts for residential buildings over the past ten years. In contrast to less expensive solutions like single-room air vents or pure exhaust air systems, the supply and exhaust air are routed through a common unit. This offers comfort advantages and allows energy-efficient operation with heat recovery. Today, about one third of the new buildings in Switzerland have automatic ventilation systems. BV

www.deklariert.ch offers significant added value

If it would have been possible to simply continue the 'Deklaration Komfortlüftung' with its more precise definition of energy efficiency, the 'Deklaration' and the EU energy label would have been used in parallel but with differently defined efficiency classes. In order to avoid this confusion, representatives of the Swiss ventilation industry and the BFE decided to adopt the efficiency categories of the EU energy labels into the 'Deklaration Komfortlüftung.' Nevertheless, www.deklariert.ch remains the central and relevant information platform for planners of comfort ventilation systems. Compared to the EU energy label, it offers three important additional pieces of information as of 2017:

- Information on total energy consumption: Unlike the EU energy labels, the 'Deklaration' also takes account of the energy required for frost-protection when allocating comfort ventilation systems to an efficiency category. This means that a ventilator must operate in a more energy-efficient manner, for example, to reach category A of the 'Deklaration' than category A of the energy labeling system. Since frost protec-



Appearance (example of a detail) of the revised 'Deklaration Komfortlüftung', which has been available since January 2017 on the energiecluster.ch website or directly at www.deklariert.ch. This enables individual devices to be compared. A comparative table ('planning overview') can be called up listing all devices. Source: energie-cluster.ch

tion can be achieved technically in different ways and with varying energy requirements, the various models of a particular ventilation unit will in the future be assigned various efficiency categories in the 'Deklaration,' depending on the degree of frost protection of the respective model.

- Information on hygiene: Contrary to the EU energy label, the 'Deklaration' assigns listed comfort ventilation systems hygiene classes. The classification criteria for the hygiene classes have been adapted as much as possible to European standards. The technical regulations of the 'Deklaration' have been harmonized with the new EU filter standards.

- Information on noise emissions: The same applies to the assignment of acoustic classes, which are also continued in the 'Deklaration,' thus providing further additional information over the EU energy label.

Innovative Thrust in Ventilation Systems

The 'Deklaration' helps customers and planners decide which ventilation devices are the most suitable for their needs and also shows the various manufacturers in which areas their devices are best suited. Since its introduction, the 'Deklaration Komfortlüftung' in Switzerland has led to an innovation boom in comfort ventilation systems. Devices with low heat recovery levels have practically disappeared from the market. "Even after revision, the 'Deklaration Komfortlüftung' (www.deklariert.ch) remains a key instrument for selecting the appropriate ventilation device," says Dr. Josef Käzigi, head of the SFOE program of knowledge and technology transfer.

- **Deklaration Komfortlüftung** available under:
www.deklariert.ch
- Further **information** at: www.deklariert.ch and www.energie-cluster.ch > Wissenstransfer > Innovationsgruppen > Komfortlüftung
- A similar **declaration for thermal insulation materials** is available free of charge:
www.energie-cluster.ch > Deklaration Wärmedämmung
- **Information** on the topic is given by Dr. Josef Käzigi ([josef.kaenzig \[at\] bfe.admin.ch](mailto:josef.kaenzig@bfe.admin.ch)), head of the SFOE program of knowledge and technology transfer.
- For further technical information on **research, pilot, demonstration and flagship projects** in the area of knowledge and technology transfer, please visit www.bfe.admin.ch/CT/divers..