ECARF Seal of Quality

Criteria for allergy-friendly Air Conditioning Units

BACKGROUND

Even when careful precautions are taken, such as only airing rooms in the early hours of the morning, allergens such as pollen, mould spores or bacteria do not stop at the front door and windows and enter the interior.

Air conditioning units can largely remove airborne allergens from the indoor air so that people with hay fever, allergic rhinoconjunctivitis or allergic asthma suffer significantly less from the symptoms of their illness.

Five important rules must be followed when using an air conditioning unit to ensure that it is really beneficial for allergy sufferers, asthmatics or atopics:

1. The room temperature should be no more than 5 °C lower than the outside temperature. Low temperatures in combination with dry air can dry out the mucous membrane unpleasantly. Asthmatics in particular also run the risk of irritating the bronchial tubes, which can lead to coughing and breathlessness.
2. Ideally, the humidity indoors should be between 40 % and 60 %.
3. Air conditioning units filter pollutants, viruses, bacteria, allergens and mould spores from the air, but only if they are properly maintained on a regular basis. It is therefore particularly important that the air conditioning unit is serviced regularly (usually once a year) to ensure that it is working properly and does not contain any germs, mould spores, etc.
4. To maximise the benefits of the air conditioner, the air must be cooled continuously (controlled at a lower power level).
5. The choice of a suitable model should be based on the size of the room and ideally orientated so that the air is evenly distributed throughout the room.

The European Centre for Allergy Research Foundation (ECARF) awards allergy-friendly air conditioning units (exclusively not permanently installed) that achieve a measurable improvement in the air quality for the specified room size in everyday operation.

The criteria are based on the principle that lower exposure to allergens is generally beneficial.

1. CRITERIA

1.1. Necessary product Features (only for air conditioning units that are not permanently installed)

- **Collection Efficiency**
  - at the most penetrating particle size (≥0.1 ≤0.3 µm): ≥ 85 %
  - at particle size at 0.5 µm (Bacteria, fine dust): ≥ 90 %

- at particle size ≥ 3 µm (mold spores, pollen): ≥ 95 %

- **Ozone release** < 7 ppb
  (a proof is only necessary for devices with ozone emitting components)
- **Temperature difference** (room temperature compared to exhaust air) < 0.3° K
- **The exhaust air has a neutral odor.**
- All devices bear an **instruction plate** which gives information about the **maximum room size** for which 95 % of all particles ≥ 3 µm are filtered out within 1 hour. This figure has also to be emphasized in the manual. Example of a statement: In a room with up to 50 m³/1,750 cubic feet the air purifier XY can filter out at least 95 % of all pollen and mold spores within 60 minutes.
- Devices with a **ventilation system** performance of less than 200 m³/hour (7,000 cubic feet/hour) have ≤ 32 dB on the lowest setting.

2. MEASUREMENTS

- Determination of the Fractional Collection Efficiency for KCl or DEHS particles in the particle size range 0,1 µm - 3 µm on complete devices.
- Determination filtration performance rate at highest blower level for particles in the ranges ≥ 0.1 µm ≤ 0.3 µm, 0.5 µm and 3.0 µm
- Test of the complete device with installed and conditioned* filter elements.
  * Conditioning procedure: putting the filter elements for 24 hours in a climate chamber with 50° C and 95 % humidity. Equal aging simulation can be agreed.
- Ozone release
  Proof is only required if the system contains components that may emit ozone.
  Test at lowest air flow mode of the room air cleaner with installed and conditioned* filter elements.
  Ozone concentration determined with suitable ozone detector, capable to detect < 3 ppb.
- Temperature difference
  Test of all blower levels (switchable blower level or infinitely variable power).
- Test conditions (temperature and humidity)
  Test of all blower settings measured at a temperature of 20° C +/- 1.5° and a humidity of less than 70 %
- Neutral Odor
  Assessment by three neutral and qualified persons following VDA 270.
- Noise emission
  Acc. manufacturer confirmation (no extra measurement).

3. QUALITY CONTROL AND COMPLAINT MANAGEMENT

The manufacturer has established a functional system of quality control that responds effectively to consumer complaints. The system ensures the following:

- The manufacturer's contact details, such as the address, telephone number and/or email address, are clearly visible on the product packaging;
- Consumer complaints are handled and followed up in an appropriate manner by qualified and experienced personnel of the manufacturer;
- The assessment of consumer complaints and, if applicable, any inferred areas of improvement are reapplied to product quality and safety. The manufacturer agrees to make this data available to ECARF on an ongoing basis.