

Reduction of particulate matter and reduced emissions of stoves The Blue Angel helps // The Blue Angel makes it visible...

Since 01.01.2020, the Blue Angel has been awarded for particularly low-emission stoves according to the criteria of DE-UZ 212.

By means of efficient and controlled combustion and additional equipment (secondary measures) to reduce emissions, the aim is to achieve a significant reduction in dust (particulate matter) levels and other exhaust gas emissions compared to conventional wood-burning stoves. The eco-label can be awarded to stoves that burn the fuel used efficiently and have significantly lower pollutant emissions. The Blue Angel supports the development of future-proof wood-burning stoves and thus contributes to environmental and climate protection. The DVGW Test Laboratory Energy, was involved in the development of this basis for awarding the Blue Angel for wood-burning stoves and supports manufacturers in testing their products.



What are the essential requirements for the fireplaces to be tested?

- ✓ Strict emission limit values according to extended test procedure, which most likely require secondary measures to reduce emissions
- ✓ Automatic air regulation that largely avoids any user influence and incorrect use
- ✓ Firing monitor (a kind of operating hours counter)
- ✓ Short user manual for the operator (Quick User Guide)

It is important to note here that the use of stoves without the environmental label will still be permitted because there have currently been no changes for users outside of those zones where the burning of solid fuels is prohibited.

Range of services

The **DVGW Energy Test Laboratory** has all the technical prerequisites and expertise required to perform this additional test. Take advantage of our expertise, our many years of experience and our technical potential to make your products future-proof. We will be happy to help you. In addition to the DE-UZ 212 award basis, we also test **pellet stoves** and **boilers** according to the **DE-UZ 111** and **DE-UZ 112** Blue Angel bases.

Just contact us!

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Design your products future-proof with us today!



What innovations does the Blue Angel bring to wood-burning stoves?

✓ A new measurement specification for the particle count

- The measurement specification was prepared in accordance with the Swiss Ordinance SR 941.242. The procedural principle is defined for particle counting using a Condensation Particle Counter (CPC) from a particle size of 23 nm.
- The Blue Angel for stoves requires the introduction of a particle count value for wood-burning appliances for the first time in order to protect health. For this purpose, this measuring method was adapted for wood combustion, which was developed from the experience with combustion engines in the automotive sector.
- On this basis, a limit value for the particle number of 5,000,000/cm³ is proposed, which is to be complied with from 2022.
- The DVGW Energy Test Laboratory is equipped to carry out the "Blue Angel" measurements.

✓ Extended measurement specification Dust, CO, OGC, NOX mass content

- The test of emission values is based on the type test according to DIN EN 13240 and/or DIN EN 16510-1, whereby different combustion phases (ignition phase, nominal load, if necessary partial load) are specified by the Basic Award Criteria and the scope of measurement has been significantly extended. Thus, the test requirements of the Blue Angel go beyond the specifications of the type test.
- The following limit values were defined for the Blue Angel:

Background information "Blue Angel"

Wood-burning stoves are usually operated as supplementary heating systems to supplement central heating systems. User behaviour ranges from operation on a few cold days to daily operation during the entire heating period. Manufacturers of wood-burning stoves can help to minimize the environmental impact of using the appliances and significantly reduce the emission of pollutants by optimizing their design. The aim of the environmental-label is to distinguish wood-burning stoves that are particularly distinguished by their compliance with the following environmental criteria:

- ✓ Reduction of fine dust
- ✓ Reduced emissions
- ✓ User-friendliness



Space heater in the test corner

Parameters	Limit value*	Limit value before particle separator*
Particulate matter mass content	0,015 g/m ³	0,040 g/m ³
Particulate matter particle count	5 x 10 ⁶ /cm ³ <i>(since 01.01.2022)</i>	no value
CO mass content		0,500 g/m ³
OGC mass content		0,070 gC/m ³
NOX mass content		0,180 g/m ³

*referred to dry exhaust gas, standardised to 0 °C, 1013 mbar, 13 vol% O₂

