

Test 2

Air cleaner




Tests carried out

1. **Test of physical properties**
 - 1.1 Burst resistance
as per DIN ISO 2758-03
 - 1.2 Filter surface weight
as per EN ISO 536
 - 1.3 Response to fire
as per DIN 53438
 - 1.4 Resistance to breakage
as per DIN ISO 1924-2
2. **Dust test as per DIN ISO 5011**
 - 2.1 Degree of separation (at 60 g dust intake)
 - 2.2 Dust capacity of filter insert (pressure difference 2000 Pa)
3. **Heavy metal content test as per end-of-vehicle directive** (tested as per relevant DIN standards)

Products tested

1. Volkswagen Genuine air cleaner
item number 1Jo 129 620
2. Normtechnik air cleaner
item number Z 1Jo 129 620

Test institute

DEKRA Umwelt GmbH  DEKRA
Laboratory for environmental
and product analysis, Stuttgart

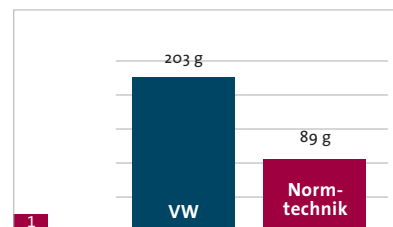
Test period

27th July 2005 to
16th September 2005

Combustion engines can only develop their full performance with a combustible, precisely metered fuel-air mixture. To attain the maximum engine output and avoid premature engine wear, the intake air has to be free of contaminants such as dust, pollen, sand and soot. Installation of highly sensitive components also makes it necessary for water to be extracted from the intake air. The design of the air cleaner should also dampen the noises from intake.

Summary and evaluation of test results

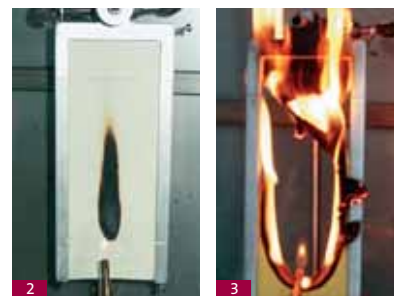
For all test criteria, apart from those from the examination of heavy metals, the figures for the Normtechnik filter were below and in part considerably lower than those of the Volkswagen Genuine filter.



The filter from Normtechnik fared particularly badly due to deficiencies inherent in its design (spacing holders for the folds, adhesive strips and padding elements are missing).

Filter performance

In particular, the basic filter performance of the Normtechnik filter in terms of retaining particulates, that are harmful to the engine, from the intake air was considerably poorer than the respective performance of the Volkswagen Genuine filter (fig. 1). The cause for this are faults in the design of this component (spacer holders for the folds, adhesive strips and padding elements are missing).



On the Volkswagen air cleaner (left), the flame goes out after 15 seconds in accordance with the requirement. The air cleaner from Normtechnik (right) burns out completely after 7 seconds.

Response to fire

Furthermore, the Normtechnik filter does not meet the requirements according to DIN 53438 that are placed on the item's response to fire. It burns out completely instead of just glowing for a short period (fig. 2+3). In a worse case scenario this could lead to an engine fire.

Result

The Normtechnik filter is not just poorer in performance than the Volkswagen Genuine air cleaner but it also violates a valid DIN standard in one of the test criteria. **This product is therefore not a comparable item in terms of quality with regards to the service partner contract. The Normtechnik product tested is thus not the same in terms of quality.**