



Vehicle & Operator Services Agency

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Our Ref: **F0001644**

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Dear

FREEDOM OF INFORMATION ACT 2000

I refer to your e-mail of 14th January requesting information.

I have been in contact with my colleague who has expertise in this area, and he has provided the following in answer to the points you have raised.

“Particulate traps and filters approved under the British Reduced Pollution Certificate or Low Emissions Certificate schemes do not necessarily improve all pollutants to a higher Euro standard but concentrate specifically on Particulate Matter (PM) levels. The approval test is based on a "worst case" engine specification (large displacement, high specific power, relatively high initial PM emission).

The Mack (Renault) EE9-560 engine is often used. An example vehicle with the worst case engine and a typical particle filter is tested on a chassis dynamometer using a test cycle based on a shortened version of the European Transient Cycle (ETC) and all particulate emissions are collected and weighed. As an additional approval requirement they are also supposed to not increase Nitrogen Oxides (NOx) but this is not measured. If the test vehicle passes then all vehicle installations which are not worse than the "worst case" vehicle are accepted.

Regarding conformity tests the Free Acceleration Smoke test (FAS) that we use does not establish conformity with a Euro standard but simply gives us some assurance that the vehicle is fitted with a particulate trap that seems to be working as it should. We use it as a proxy as smoke opacity seems to us to be loosely related to density of carbon particulates in the smoke plume. It is the fitment of a known type-approved device that achieved the Euro standard during testing that we rely on - and that works by the device having recognised identification numbers. This is far from foolproof as we have had some devices presented with fake manufacturer's plaques.

The FAS test does need engines to be pre-heated to normal operating temperature. There is no time measure but the bulk oil temperature should be at least 60 degrees centigrade. Smoke meters usually have an oil temperature probe facility. Usually vehicles presented for test are warm enough from the journey to the test station but if they have been waiting a long time for test or it is very cold we allow a short brisk warm up run. (Leaving vehicles idling in Britain often cools them down rather than warms them.)

The exhaust system should be purged of accumulated smoke and carbon by a sustained run close to governed speed for 10-15 seconds prior to inserting the meter probe. Once it is purged the meter is inserted into the tailpipe. The accelerator pedal is then depressed quickly but not sharply (over a period of about one second) from idle until the engine reaches governed speed. (Our smoke meters automatically identify that governed speed has been reached because the smoke opacity peaks then reduces as the flywheel inertia is overcome). The pedal is then released and the process is repeated several times up to a maximum of six accelerations. The meter records the highest smoke opacity during each acceleration cycle.

The test is passed if the average of the last three acceleration results is less than or equal to the limit level. This is automatically calculated by an algorithm built into the smoke meter software. As said previously there is no definite correlation between smoke opacity and the Euro type approval ETC standard but we have empirically decided the following:

k	g/kWh	Euro standard
0.8	0.16	Euro 3
0.4	0.08	N/A (British Reduced Pollution Certificate technical standard)
0.2	0.03	Euro 4

We have pre-programmed these limits into our smoke meters to make the result calculation easier so the meter automatically issues a pass or fail decision. We take no account of engine power. (This means that some FAS tests are easily passed as some manufacturers deliberately reduce engine speed and power output whilst the vehicle is stationary to reduce transmission damage and noise in residential areas.)”

If you have any queries about this letter, please contact us at the above address, quoting reference **F0001644**.

If you are unhappy with the information supplied, you may ask for an internal review. To request an internal review, please write to:

VOSA Corporate Office,
Berkeley House,
Croydon Street,
Bristol,
BS5 0DA

or email vosa.corporateoffice@vosa.gsi.gov.uk

giving the reasons for your dissatisfaction. It will help us if you quote the reference number for your case.

If you do not agree with the outcome of the internal review, you may lodge an appeal with the Information Commissioner (www.informationcommissioner.gov.uk). The Information Commissioner is an independent official appointed by the Crown to oversee the Data Protection Act 1998, the Freedom of Information Act 2000 and the Environmental Information Regulations 2004.

The Information Commissioner can consider complaints about any aspect of the way in which requests for information have been handled. Please note: the Information Commissioner would be unlikely to consider your complaint if you have not first requested an internal review.

You can write to the Information Commissioner at:

The Information Commissioner's Office
Wycliffe House,
Water Lane,
Wilmslow,
Cheshire
SK9 5AF

Yours sincerely

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