Environmental Protection Agency

§ 610.33 Durability tests.

The Administrator may determine that a device under evaluation will require durability testing in addition to the basic evaluation testing for device effectiveness. This requirement may be necessary for several reasons:

(a) A retrofit device manufacturer may claim that some mileage accumulation may be needed before the full effectiveness of the device can be obtained. If such claims are made, durability testing as described in subpart E may be performed. To determine whether the effectiveness change during the mileage accumulation is a function of the device or of the mileage accumulation alone, in some durability tests it may be necessary to run the mileage accumulation on vehicles with and without the device. Due to the high cost of durability testing and in particular of such duplicate testing, it will be used only where it is judged by the Administrator to be necessary.

(b) A device may have a limited life expectancy or be such that it requires replacement or adjustment at a prescribed mileage interval. Confirmatory durability tests may be run to assess whether such mileage intervals are proper and effective.

(c) A device may be suspected of having an adverse effect on the durability of the engine to which it is applied. After identification of a potential failure mode, durability tests may be conducted to investigate any changes in engine characteristics associated with that failure mode. Examples are valve problems, deterioration in spark plug life, increase in carburetor or combustion chamber deposits, or increased engine wear. If it is not possible to directly measure the change in the suspect characteristic, then a durability run may be made as described in subpart E, in which fuel economy and exhaust emissions are periodically checked during the accumulation of up to 15,000 miles.

(d) A critical item which can influence fuel economy is vehicle maintenance. Any durability test program used in evaluation of the effectiveness of a device may require durability testing.
§ 610.34 Special test conditions.

If the Administrator determines that a device may have potentially detrimental effects on the operation of a vehicle when operated in ambient conditions outside the range specified in 40 CFR part 86, or if the device manufacturer claims a fuel economy improvement in such conditions, additional tests may be performed. These tests will determine whether the device will significantly limit the operational usefulness of the vehicle and will assess the claimed fuel economy benefit.

(a) Extreme temperatures. As required by the Administrator, tests will be conducted at extreme ambient temperature conditions to determine the effect due to devices (e.g. engine heaters) for which fuel economy improvements at extreme temperatures are made. For other devices it may be necessary to determine whether the cold starting and driving capability of device-equipped vehicles is affected sufficiently to make them dangerous, or whether fuel economy characteristics at extreme temperatures are significantly worse than before the device was installed.

(b) High altitude. Devices for which specific claims of improved fuel economy at high altitude are made may be tested using the procedures in subpart D, at altitudes above 4000 feet. For other devices, testing at high altitude may be necessary for determining whether a device will make the vehicle less useful or efficient when operated at various altitudes. The Administrator will determine when such testing is required.

§ 610.35 Driveability and performance tests.

If the Administrator determines that driveability and performance of a vehicle may be adversely affected by the use of a device, a number of automobiles to be determined by the Administrator will be subjected to the driveability and performance tests discussed in §§610.62 and 610.63, respectively.

Subpart D—General Vehicle Test Procedures

§ 610.40 General.

Two chassis dynamometer test procedures, the Federal Test Procedure and the Highway Fuel Economy Test will generally be used to evaluate the effectiveness of the devices supplemented by steady state or engine dynamometer tests where warranted. Under unusual circumstances, other test procedures, durability test procedures or special test procedures such as track versions of the City and Highway fuel economy tests may be used. These procedures are described in subparts E and F.

§ 610.41 Test configurations.

(a) In order to measure the effectiveness of a retrofit device at least two, and in some cases, three vehicle configurations defined in §610.11 will be tested. Each vehicle will be tested at least twice in each configuration, as determined by the Administrator.

(b) The first test configuration is a baseline configuration. In this configuration the baseline or unretrofitted vehicle emissions will be measured.

(c) A second test configuration, an adjusted configuration, may be required at the discretion of the Administrator if a device requires both hardware and engine parameter modifications to achieve the fuel economy improvement. If, in the Administrator’s judgment, based on a review of the available information, the combined effects of retrofit hardware installation and parametric adjustment could be substantially duplicated by parametric adjustment alone, then the Administrator may specify a second test, to evaluate such adjustment exclusive of the retrofit hardware.