

emissions under high speeds and accelerations (aggressive driving); and a sequence of vehicle operation that tests exhaust emissions with a driving schedule (SC03) which includes the impacts of actual air conditioning operation. These test procedures (and the associated standards set forth in subpart S of this part) are applicable to light-duty vehicles and light-duty trucks.

(a) Vehicles are tested for the exhaust emissions of THC, CO, NO_x, CH₄, and CO₂. For diesel-cycle vehicles, THC is sampled and analyzed continuously according to the provisions of § 86.110.

(b) Each test procedure follows the vehicle preconditioning specified in § 86.132-00.

(c) *US06 Test Cycle.* The test procedure for emissions on the US06 driving schedule (see § 86.159-00) is designed to determine gaseous exhaust emissions from light-duty vehicles and light-duty trucks while simulating high speed and acceleration on a chassis dynamometer (aggressive driving). The full test consists of preconditioning the engine to a hot stabilized condition, as specified in § 86.132-00, and an engine idle period of 1 to 2 minutes, after which the vehicle is accelerated into the US06 cycle. A proportional part of the diluted exhaust is collected continuously for subsequent analysis, using a constant volume (variable dilution) sampler or critical flow venturi sampler.

(d) *SC03 Test Cycle.* The test procedure for determining exhaust emissions with the air conditioner operating (see § 86.160-00) is designed to determine gaseous exhaust emissions from light-duty vehicles and light-duty trucks while simulating an urban trip during ambient conditions of 95 °F, 100 grains of water/pound of dry air (approximately 40 percent relative humidity), and a solar heat load intensity of 850 W/m². The full test consists of vehicle preconditioning (see § 86.132-00 paragraphs (o) (1) and (2)), an engine key-off 10 minute soak, an engine start, and operation over the SC03 cycle. A proportional part of the diluted exhaust is collected continuously during the engine start and the SC03 driving cycle for subsequent analysis, using a constant volume (variable dilution) sampler or critical flow venturi sampler.

(e) The emission results from the aggressive driving test (§ 86.159-00), air conditioning test (§ 86.160-00), and a FTP test (§ 86.130-00 (a) through (d) and (f)) (conducted on a large single roll or equivalent dynamometer) are analyzed according to the calculation methodology in § 86.164-00 and compared to the applicable SFTP emission standards in subpart A of this part (§§ 86.108-00 and 86.109-00).

(f) These test procedures may be run in any sequence that maintains the applicable preconditioning elements specified in § 86.132-00.

[61 FR 54894, Oct. 22, 1996, as amended at 70 FR 40434, July 13, 2005]

§ 86.158-08 Supplemental Federal Test Procedures; overview.

The procedures described in §§ 86.158-08, 86.159-08, 86.160-00, and 86.162-00 discuss the aggressive driving (US06) and air conditioning (SC03) elements of the Supplemental Federal Test Procedures (SFTP). These test procedures consist of two separable test elements: A sequence of vehicle operation that tests exhaust emissions with a driving schedule (US06) that tests exhaust emissions under high speeds and accelerations (aggressive driving); and a sequence of vehicle operation that tests exhaust emissions with a driving schedule (SC03) which includes the impacts of actual air conditioning operation. These test procedures (and the associated standards set forth in subpart S of this part) are applicable to light-duty vehicles and light-duty trucks.

(a) Vehicles are tested for the exhaust emissions of THC, CO, NO_x, CH₄, and CO₂. For diesel-cycle vehicles, THC is sampled and analyzed continuously according to the provisions of § 86.110.

(b) Each test procedure follows the vehicle preconditioning specified in § 86.132-00.

(c) *US06 Test Cycle.* The test procedure for emissions on the US06 driving schedule (see § 86.159-08) is designed to determine gaseous exhaust emissions from light-duty vehicles and light-duty trucks while simulating high speed and acceleration on a chassis dynamometer (aggressive driving). The full test consists of preconditioning the engine to a hot stabilized condition, as specified in

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§ 86.132-00, and an engine idle period of 1 to 2 minutes, after which the vehicle is accelerated into the US06 cycle. A proportional part of the diluted exhaust is collected continuously for subsequent analysis, using a constant volume (variable dilution) sampler or critical flow venturi sampler. Optionally, as specified in § 86.159-08 and in part 600 of this chapter, a proportional part of the diluted exhaust may be collected continuously in two bag samples, one representing US06 City driving and the other representing US06 Highway driving. If two bag samples are collected, for petroleum-fueled diesel-cycle vehicles for which THC is sampled and analyzed continuously according to the provisions of § 86.110, the analytical system shall be configured to calculate THC for the US06 City phase and the US06 Highway phase as described in § 86.159-08.

(d) *SC03 Test Cycle.* The test procedure for determining exhaust emissions with the air conditioner operating (see § 86.160-00) is designed to determine gaseous exhaust emissions from light-duty vehicles and light-duty trucks while simulating an urban trip during ambient conditions of 95 °F, 100 grains of water/pound of dry air (approximately 40 percent relative humidity), and a solar heat load intensity of 850 W/m². The full test consists of vehicle preconditioning (see § 86.132-00 paragraphs (o)(1) and (2)), an engine key-off 10 minute soak, an engine start, and operation over the SC03 cycle. A proportional part of the diluted exhaust is collected continuously during the engine start and the SC03 driving cycle for subsequent analysis, using a constant volume (variable dilution) sampler or critical flow venturi sampler.

(e) The emission results from the aggressive driving test (§ 86.159-08), air conditioning test (§ 86.160-00), and FTP test (§ 86.130-00 (a) through (d) and (f)) (conducted on a large single roll or equivalent dynamometer) are analyzed according to the calculation methodology in § 86.164-08 and compared to the applicable SFTP emission standards in subpart S of this part.

(f) These test procedures may be run in any sequence that maintains the ap-

plicable preconditioning elements specified in § 86.132-00.

[71 FR 77920, Dec. 27, 2006]

§ 86.159-00 Exhaust emission test procedures for US06 emissions.

(a) *Overview.* The dynamometer operation consists of a single, 600 second test on the US06 driving schedule, as described in appendix I, paragraph (g), of this part. The vehicle is preconditioned in accordance with § 86.132-00, to bring it to a warmed-up stabilized condition. This preconditioning is followed by a 1 to 2 minute idle period that proceeds directly into the US06 driving schedule during which continuous proportional samples of gaseous emissions are collected for analysis. If engine stalling should occur during cycle operation, follow the provisions of § 86.136-90 (engine starting and restarting). For gasoline-fueled Otto-cycle vehicles, the composite samples collected in bags are analyzed for THC, CO, CO₂, CH₄, and NO_x. For petroleum-fueled diesel-cycle vehicles, THC is sampled and analyzed continuously according to the provisions of § 86.110. Parallel bag samples of dilution air are analyzed for THC, CO, CO₂, CH₄, and NO_x.

(b) *Dynamometer activities.* (1) All official US06 tests shall be run on a large single roll electric dynamometer, or an approved equivalent dynamometer configuration, that satisfies the requirements of § 86.108-00.

(2) Position (vehicle can be driven) the test vehicle on the dynamometer and restrain.

(3) Required US06 schedule test dynamometer inertia weight class selections are determined by the test vehicles test weight basis and corresponding equivalent weight as listed in the tabular information of § 86.129-94(a) and discussed in § 86.129-00 (e) and (f).

(4) Set the dynamometer test inertia weight and roadload horsepower requirements for the test vehicle (see § 86.129-00 (e) and (f)). The dynamometer's horsepower adjustment settings shall be set to match the force imposed during dynamometer operation with actual road load force at all speeds.