

AIR POLLUTION CONTROL REGULATION NO. 34

**RHODE ISLAND MOTOR VEHICLE
INSPECTION/MAINTENANCE PROGRAM**

Effective 30 March 2000

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RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES
AIR POLLUTION CONTROL REGULATION NO. 34
RHODE ISLAND MOTOR VEHICLE INSPECTION/MAINTENANCE PROGRAM

34. Rhode Island Motor Vehicle Inspection/Maintenance Program (Rhode Island I/M Program)

34.1. Definitions

As used in these regulations, the following terms shall, where the context permits, be construed as follows:

- 34.1.1. "Authorized Inspection Repair Station" and "AIRS" mean an inspection location authorized by the Department to provide motor vehicle safety and emission inspection and repairs, or inspections only.
- 34.1.2. "Calibration" means the act of checking and adjusting the exhaust emission analyzer by introducing reference gases of known concentrations into the analyzer.
- 34.1.3. "CIRT" means a Certified Inspection Repair Technician certified by the Department of Administration to provide both inspection and repairs for motor vehicle safety and emissions.
- 34.1.4. "CIT" means a Certified Inspection Technician certified by the Department of Administration to perform motor vehicle safety and emission inspections only.
- 34.1.5. "Day" means a calendar day, unless otherwise designated.
- 34.1.6. "Dealer" means a person or entity engaged in the business of buying, selling, or exchanging vehicles and who has an established place of business for such purpose and as further defined in section 31.1.19 (a) of the Motor Vehicle Code.
- 34.1.7. "Department" means the Rhode Island Department of Environmental Management.

- 34.1.8. "Exhaust emissions standard" means the maximum allowable levels of carbon monoxide, hydrocarbons and oxides of nitrogen appropriate for the age and type of vehicle tested.
- 34.1.9. "Gross vehicle weight rating (GVWR)" is the weight value specified by the vehicle manufacturer on the Federal weight certification label as the loaded weight of a vehicle.
- 34.1.10. "IM240" means the transient dynamometer schedule described in EPA Report number EPA-AA-EPSP-IM-93-1 April 1994.
- 34.1.11. "Inspection" means the testing of the exhaust and functional emission controls along with a safety inspection of a subject vehicle.
- 34.1.12. "Inspection station" means a facility for motor vehicle safety and emissions inspection operated by an AIRS.
- 34.1.13. "Model year" means the manufacturer's annual production period for each engine family which includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year. In the case of any motor vehicle manufactured in two or more stages, the time of manufacture shall be the date of completion of the chassis.
- 34.1.14. "Motor vehicle" means every motor vehicle which is self-propelled, except vehicles moved exclusively by human power and motorized wheelchairs.
- 34.1.15. "New Motor Vehicle" means a motor vehicle that the equitable or legal title has never been transferred to the first person who in good faith purchases the vehicle for purposes other than resale.
- 34.1.16. "Operator" means any motorist, owner or lessee in control of a motor vehicle.
- 34.1.17. "Person" means any individual, partnership, corporation, whether private, public or quasi-municipal, municipality, state governmental department or other legal entity.
- 34.1.18. "RI2000" means the transient dynamometer emissions test described in the Department of Environmental Management APC Regulation No. 34.

- 34.1.19. "Rhode Island I/M Program" means the Rhode Island Motor Vehicle Inspection/Maintenance Program.
- 34.1.20. "Rhode Island I/M Program Manager" means a person, business firm, partnership, or corporation with whom the Department has a contract that provides for the establishment and operation of the Rhode Island Motor Vehicle Inspection/Maintenance Program.
- 34.1.21. "Remote Sensing Device" is a device which directs an infra-red or laser beam across a lane of traffic to instantly detect and read the concentrations of pollutants in a vehicle's exhaust.
- 34.1.22. "Safety and emission inspection program" means an enhanced vehicle emission inspection program as defined by the Environmental Protection Agency including, but not limited to, a network of computerized emission analyzers, on-road testing, and inspection of vehicle safety devices through an inspection program.
- 34.1.23. "Test", and "testing" mean the use of analyzers and diagnostic equipment as appropriate and the application of techniques, methods, policies and procedures established or approved by the Department for the purpose of comparing emission levels and/or operating systems in vehicles to regulatory safety and emission standards.
- 34.1.24. "Transient emission test" means the quantitative measurement and comparison to established standards of a vehicle's exhaust emissions over a specified maximum time period while operating the vehicle on an inertia weight loaded dynamometer over a specified driving cycle.
- 34.1.25. "Year" means a calendar year.

34.2. Applicability

These regulations apply to all motor vehicles subject to the inspection requirements of the Rhode Island Motor Vehicle Inspection/Maintenance Program, Safety and Emissions Control Regulation No. 1.

34.3. Inspection Standards

These regulations establish the following standards and criteria for motor vehicle emissions inspections. These regulations are devised to give consideration to the levels of emissions reduction necessary to achieve and maintain federal and state ambient air quality standards and the levels necessary to protect human health and the environment. The standards and criteria shall include, but not be limited to, a requirement to test the emissions of motor vehicles for hydrocarbons (HC), carbon monoxide (CO) and oxides of nitrogen (NO_x).

Vehicles subject to the Rhode Island I/M Program shall be inspected for compliance with the following standards, criteria and procedures using an exhaust emissions test, evaporative emissions test, and on-board diagnostics inspection.

Vehicles subject to the Rhode Island I/M Program which cannot be inspected using a transient test because of vehicle drive system configuration such as all-wheel drive shall be inspected using a two speed idle test.

34.4. Exhaust Emissions Standards

34.4.1. Phase-in Standards

The phase-in standards (tables 1-3) shall apply for two years after the inspection requirement commences.

RI2000 DYNAMOMETER EXHAUST EMISSIONS STANDARD

<u>Light Duty Vehicles</u>			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer	2.25	23.74	3.25
1991 – 1995	3.06	30.99	4.09
1983 – 1990	4.70	45.48	7.21
1981 – 1982	4.70	88.96	7.21
1980	4.70	88.96	9.92
1977 – 1979	15.92	132.44	9.92
1975 – 1976	15.92	132.44	14.92
Pre 1975 (advisory)	15.92	132.44	14.92

Light Duty Trucks 1 Trucks less than or equal to 6,000 pounds GVWR			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer 3,750 LVW or less	2.25	23.74	3.25
1996 and newer Greater than 3,750 LVW	2.66	30.99	4.09
1991 – 1995	5.51	88.96	4.92
1988 – 1990	7.15	117.95	8.46
1984 – 1987	10.31	117.95	11.59
1979 – 1983	15.92	146.93	11.59
1975 – 1978	16.94	175.92	14.92
Pre 1975 (advisory)	16.94	175.92	14.92
Light Duty Trucks 2 Trucks greater than 6,000 pounds GVWR			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer 5,750 ALVW or less	2.66	30.99	4.09
1996 and newer greater than 5,750 ALVW	5.51	88.96	6.59
1991 – 1995	5.51	88.96	7.42
1988 – 1990	7.15	117.95	8.25
1984 – 1987	10.31	117.95	11.59
1979 – 1983	15.92	146.93	11.59
1975 – 1978	16.94	175.92	14.92
Pre 1975 (advisory)	16.94	175.92	14.92

LVW means loaded vehicle weight. ALVW means adjusted loaded vehicle weight.

TWO SPEED IDLE EXHAUST EMISSIONS STANDARD

<u>Light Duty Vehicles</u>		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0
<u>Light Duty Trucks 1</u>		
Trucks less than or equal to 6,000 pounds GVWR		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0
<u>Light Duty Trucks 2</u>		
Trucks greater than 6,000 pounds GVWR		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0

DIESEL VEHICLE OPACITY EMISSIONS STANDARD

All Light-Duty Vehicles and Trucks up to 8,500 lbs. GVWR		
Model Year	Diesel Smoke Opacity Cutpoints (%)	
	Loaded	Idle
All	20%	20%

34.4.2. Final Standards

The final standards shall apply beginning two years after the inspection requirement commences and continue thereafter.

RI2000 DYNAMOMETER EXHAUST EMISSIONS STANDARD

<u>Light Duty Vehicles</u>			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer	1.84	16.50	2.42
1991 – 1995	2.25	23.74	3.25
1984 – 1990	2.25	23.74	3.25
1981 – 1982	2.25	45.48	3.25
1980	2.25	45.48	6.59
1977 – 1979	6.74	96.21	6.59
1975 – 1976	6.74	96.21	9.92
Pre 1975 (advisory)	15.92	132.44	14.92
Light Duty Trucks 1 Trucks less than or equal to 6,000 pounds GVWR			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer 3,750 LVW or less	1.84	16.50	2.42
1996 and newer Greater than 3,750 LVW	2.25	20.84	2.92
1991 – 1995	3.88	59.97	4.09
1988 – 1990	3.88	59.97	4.09
1984 – 1987	3.88	59.97	7.42
1979 – 1983	7.55	103.45	7.42
1975 – 1978	8.78	117.95	9.92
Pre 1975 (advisory)	16.94	175.92	14.92
Light Duty Trucks 2 Trucks greater than 6,000 pounds GVWR			
	Hydrocarbons (grams per mile)	Carbon Monoxide (grams per mile)	Oxides of Nitrogen (grams per mile)
1996 and newer 5,750 ALVW or less	2.25	20.84	2.92
1996 and newer greater than 5,750 ALVW	2.25	23.74	3.25
1991 – 1995	3.88	59.97	5.75
1988 – 1990	3.88	59.97	5.75

1984 – 1987	3.88	59.97	7.42
1979 – 1983	7.55	103.45	7.42
1975 – 1978	8.78	117.95	9.92
Pre 1975 (advisory)	16.94	175.92	14.92

LVW means loaded vehicle weight. ALVW means adjusted loaded vehicle weight.

TWO SPEED IDLE EXHAUST EMISSIONS STANDARD

<u>Light Duty Vehicles</u>		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0
<u>Light Duty Trucks 1</u>		
Trucks less than or equal to 6,000 pounds GVWR		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0
<u>Light Duty Trucks 2</u>		
Trucks greater than 6,000 pounds GVWR		
Idle and 2500 RPM Cutpoints		
	Hydrocarbons (ppm)	Carbon Monoxide (percent)
1981 and later	220	1.2
1979-1980	300	2.5
1975-1978	300	3.0
1968-1974	700	6.0
Pre-1968	800	7.0

DIESEL VEHICLE OPACITY EMISSIONS STANDARD

All Light-Duty Vehicles and Trucks up to 8,500 lbs. GVWR		
Model Year	Diesel Smoke Opacity Standards (%)	
	Dynamometer Test	Idle Test
All	20%	20%

34.4.3. Light Duty Diesel Emission Standards (up to 8,500 lbs. GVWR) Opacity Test

Dynamometer Opacity Test

The RI2000 workstation and dynamometer shall be used to inspect vehicles capable of being tested on the dynamometer for opacity. Vehicles shall be driven to a speed of thirty miles per hour with the load increasing as the vehicle increases speed. Target parameters shall be displayed on the tests screen and inspectors shall follow the procedures and adhere the standards outlined in the RI2000 specifications included in Appendix "A".

Idle Opacity Test

Vehicles that cannot be tested using the dynamometer shall undergo a diesel idle cycle test that shall follow the procedures and employ the standards outlined in the RI2000 specifications included in Appendix "A".

34.4.4. Evaporative Emissions Standard

Gas Cap Integrity Test

Gas caps shall be inspected using the Gas Cap Integrity Test. Gas caps shall be subject to an initial system pressure of 30 ± 1 inches of water. Gas caps with a leak rate of less than or equal to 60 cubic centimeters per minute shall have passed the Gas Cap Integrity Test.

34.4.5. On-Board Diagnostics Test Standards

OBD-II inspection shall occur through the connection of the OBD-II SAE standardized vehicle port to the RI2000 workstation. The RI2000 shall access engine RPM, readiness codes, and fault codes for all OBD-II equipped vehicles. Fault codes shall be recorded to be compared to the results of other tests and to assist in diagnosis of other test failures. Inspectors shall follow the procedures outlined in the RI2000 specifications included in Appendix "A".

34.5. Inspection Procedures

The AIRS shall conduct emissions inspections using the emissions inspection procedures in APPENDIX "A" of these regulations. The AIRS shall calibrate the inspection testing equipment using calibration frequency and procedure to be developed by the Department and the Program Manager.

34.6. Audits

The Rhode Island I/M Program Manager shall cooperate with the Department in conjunction with the conducting of audits of, records, equipment and computer data, by providing, in a timely manner, access, documentation and computer information which may be required to complete any Rhode Island I/M Program audits including, but not limited to, the following audits:

34.6.1. Equipment Audits

Quality control evaluations shall be conducted at a minimum of two overt audits per year, per inspection bay on emissions test equipment, with additional audits as needed. The audits may be conducted electronically using the centralized computer. The evaluations will include:

- (a) A gas audit using gases of known concentrations and comparing these concentrations to actual readings;
- (b) A check for tampering, worn instrumentation, blocked filters, and other conditions that would impede accurate sampling;
- (c) A check for critical flow;
- (d) A check of the Constant Volume Sample flow calibration;
- (e) A leak check;

- (f) A check to determine that inspection station gas bottles used for calibration purposes are properly labeled and within relevant tolerances;
- (g) A check for the optimization of the analyzer;
- (h) Functional dynamometer checks addressing coast down, roll speed, roll distance, inertia weight selection and power absorption;
- (i) A check of the system's ability to accurately detect background pollutant concentrations;
- (j) A check of evaporative test equipment (gas cap tester); and,
- (k) A check of On-Board Diagnostics testing equipment.

34.6.2. Computer and Record Audits

The Rhode Island I/M Program Manager shall provide, for the emissions inspections network, a computer system which shall interface with the Department of Administration's computer system and be devised to allow for the capacity to make a realtime collection, analysis and reporting of test data, quality control data, and perform other analysis and reporting on all aspects of the Rhode Island Vehicle Emissions Inspection Program.

34.7. Reporting

The Rhode Island I/M Program Manager shall assist in the collection of general information detailing analysis and evaluation of test data, quality assurance, quality control, enforcement and other areas of the Rhode Island Vehicle Inspection Program.

APPENDIX "A"
Rhode Island
Motor Vehicle Inspection Test Procedures

Technical Specifications

