

**California Inspection and
Maintenance Review Committee**

Smog Check II Evaluation

Glossary

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Glossary of Acronyms

APCD	Air Pollution Control District
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
ASM	Acceleration Simulation Mode
BAR	California Bureau of Automotive Repair
CAAA	Clean Air Act Amendments of 1990
Cal-EPA	California Environmental Protection Agency
CAP	Consumer Assistance Program
CHP	California Highway Patrol
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
DMV	California Department of Motor Vehicles
FTP	Federal Test Procedure
HC	Hydrocarbons
I/M	Inspection and Maintenance
IMRC	Inspection and Maintenance Review Committee
MPO	Metropolitan Planning Organization
MY	Model Year
NAAQS	National Ambient Air Quality Standards
NO	Nitrogen Oxide
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
RAP	Repair Assistance Program

RTP	Regional Transportation Plan
SACOG	Sacramento Area Council of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	Station Implementation Plan
TIP	Transportation Improvement Program
USEPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
VRP	Vehicle Retirement Program

Glossary of Terms

ASM2525 and ASM5015	These are the two portions of the BAR97 emissions test used in the Smog Check II program. The ASM stands for “Acceleration Simulation Mode”. The 2525 refers to the fact that the test is run at a speed of 25 mph and at an engine load of 25 percent of the maximum load experienced during the Federal Test Procedure (FTP). The 5015 refers to the fact the test is run at a speed of 15 mph and at an engine load of 50 percent of the maximum load experienced during the FTP.
BAR84	The name for the Smog Check program that was implemented in 1984 and also the name for the test used in that program. The BAR84 test was an <i>idle test</i> . That is, an emissions test performed without the engine in gear.
BAR90	The name for the Smog Check program that was implemented in 1990 and also the name for the test used in that program. The BAR90 test is still used in the non-Enhanced areas of the state. The BAR90 test is an <i>idle test</i> . That is, an emissions test performed without the engine in gear.
BAR97	The name for the test used in the Enhanced Smog Check program. The BAR97 test is a <i>steady state, loaded-mode</i> emissions test. “Loaded-mode” refers to the fact that the test is run on a treadmill-like device called a <i>dynamometer</i> , which simulates actual driving with the engine in gear. “Steady state” refers to the fact that the car drives under a constant load throughout the test.
Cold Start	Tailpipe emissions that occur for a few minutes after a car is first started. Vehicles’ emissions are higher during the first few minutes of operation because the catalytic converter must heat up before it can become effective.
Correlation	The degree to which two variables change in concert with each other in a linear fashion. The correlation coefficient can vary between –1 and 1. A correlation of 1 indicates perfect correlation, a correlation of zero indicates no correlation, and a correlation of -1 indicates perfect anti-correlation (i.e., when one variable goes up, the other goes down).

Cut Point	For each pollutant, the emissions level above which a car is considered to have failed the emissions test for that pollutant.
Dynamometer	A treadmill-like machine that allows cars to be tested under conditions that simulate real driving.
Economic Hardship Extension	A two-year extension on the requirement to repair a vehicle that fails a Smog Check. It can be granted to motorists who meet low-income criteria.
Evaporative Emissions	Hydrocarbon emissions that do not come from the tailpipe of a car. Evaporative emissions can come from evaporation, permeation, seepage, and leaks in a car's fueling system. Often used interchangeably with <i>non-tailpipe emissions</i> .
Federal Test Procedure	The test ARB and USEPA use to certify that new vehicles meet required emissions standards.
Hot Soak Emissions	Non-tailpipe hydrocarbon emissions that occur right after a car is turned off as the engine cools.
Hybrid Program	Refers to an I/M program that has both test-only and test-and-repair testing. California's Smog Check program is a hybrid program.
I/M	Abbreviation for <i>Inspection and Maintenance</i> , the generic term for vehicle emissions testing and repair programs like Smog Check.
IM240	The name for the emissions test used in some I/M programs around the country, including Arizona, Colorado and Illinois. The IM240 is a <i>transient, loaded-mode</i> emissions test. "Loaded-mode" refers to the fact that the test is run on a treadmill-like device called a <i>dynamometer</i> , which simulates actual driving with the engine in gear. "Transient" refers to the fact that the car drives under a load that varies from second to second during the test. The "240" in IM240 reflects the fact that the test lasts for 240 seconds. The IM240 is intended by USEPA to be a shortened version of part of the FTP and to correlate well with the FTP.

Loaded Mode Emissions Test	An emissions test performed with the engine in gear. Loaded-mode tests can be performed on dynamometers, which simulate actual driving, or on the road using a remote sensor to measure emissions.
Non-Tailpipe Emissions	Hydrocarbon emissions that do not come from the tailpipe of a car. These emissions can come from evaporation, permeation, seepage, and leaks in a car's fueling system.
NOx	Generic representation for oxides of nitrogen, which can be either nitrogen oxide (NO) or nitrogen dioxide (NO ₂)
Ping-Pong	Colloquial term to describe the case where a car fails at station A, is repaired at station B, goes back to station A for a re-test, but fails again. Ping-Ponging is undesirable because it results in motorists spending time going back and forth between Smog Check stations.
Running Losses	Non-tailpipe hydrocarbon emissions that occur while a car is being driven.
Statistical Significance	<p>A measured result, such as the difference in emissions between two groups of vehicles, is <i>statistically significant</i> if the result was unlikely to have arisen by chance (that is, due to random error in the sampling of vehicles). Researchers usually use 95% confidence as the cutoff for statistical significance. Thus, when a result is termed statistically significant, there is at least a 95% chance that the measured difference is a real difference between the two populations being studied.</p> <p>“Significance” in this context <i>should not</i> be taken to mean “important” or “noteworthy”. It refers only to the fact that a measured result is very likely to be a real effect and not a spurious one due to random error. A measured difference could, for example, be statistically significant (that is, real), but could nevertheless be so small as to be of no practical importance.</p>
Steady-State Emissions Test	An emissions test in which a car is driven under a constant load. The ASM test used in California's Smog Check program is a steady-state test.
Test-and-Repair	Refers to emissions testing of cars at stations that can do both testing and repair.

Test-Only	Refers to emissions testing of cars at stations that are allowed to test cars but not repair them.
Transient Emissions Test	A test that puts a car under a load that varies from moment to moment during the test. The IM240 test, which is used in some test-only I/M programs, is a transient test.
Waiver	If repairs to a vehicle that fails Smog Check would cost more than \$450, the motorist can be granted a waiver of the requirement to pass Smog Check.