

**CARB Regulation for Motorcycles and Motorcycle Engines – language in red refers to deterioration factor methodologies**

**§ 1958. Exhaust Emission Standards and Test Procedures - Motorcycles and Motorcycle Engines Man...**

13 CA ADC § 1958 BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS

Barclays Official California Code of Regulations [Currentness](#)  
 Title 13. Motor Vehicles  
 Division 3. Air Resources Board  
 Chapter 1. Motor Vehicle Pollution Control Devices  
 Article 2. Approval of Motor Vehicle Pollution Control Devices (New Vehicles) (Refs & Annos)

13 CCR § 1958

**§ 1958. Exhaust Emission Standards and Test Procedures - Motorcycles and Motorcycle Engines Manufactured on or After January 1, 1978.**

(a) This section shall be applicable to motorcycles, motorcycle engines, and the manufacturers of either motorcycles or motorcycle engines produced on or after January 1, 1978. Motorcycles and motorcycle engines are excluded from the requirements of this section if:

- (1) The engine displacement is less than 50 cubic centimeters, or
- (2) An 80 kilogram (176 pound) driver cannot
  - (A) start from a dead stop using only the engine, or
  - (B) exceed a maximum speed of 40 kilometers per hour (24.9 miles per hour) on a level paved surface.

(b) Exhaust emissions from new street-use motorcycles and motorcycle engines, subject to registration and sold and registered in this state, shall not exceed:

Table of Standards

	Engine	Exhaust Emission Standards (grams per kilometer)	
Model-Year	Displacement	Hydrocarbon (HC)	Carbon
	(in cubic centimeters)	+ Oxides of Nitrogen (NOx)	Monoxide

1978 to 1979	50 to less than 170	5.0 (HC only)	17
	170 to less than 750	$5.0 + 0.0155(D - 170)$ [FNa1] (HC only)	17
	750 or greater	14 (HC only)	17
1980 to 1981	All (50 cc or larger)	5.0 (HC only)	17
1982 and subsequent	50 cc to 279 cc	1.0 (HC only)	12
1982 through 1985			
(manufactured prior to March 1, 1985)			
	280 cc or greater	2.5 (HC only)	12
1985 (manufactured after February 28, 1985) through 1987			
	280 cc or greater	1.4 (HC only), applied as a	12

		corporate average, [FNa2] provided	
		that each engine family shall	
		have only one applicable	
		standard	
1988 through 2003	280 cc to 699 cc	1.0 (HC only), applied as a	12
		corporate average, [FNa2] provided	
		that each engine family shall	
		have only one applicable	
		standard	
1988 through 2003	700 cc or greater	1.4 (HC only), applied as a	12
		corporate average, [FNa2] provided	
		that each engine family shall	
		have only one applicable	

		standard	
2004 through 2007	280 cc or greater	1.4 (HC + NOx), applied as a	12
		corporate average, [FNa2] provided	
		that each engine family shall	
		have only one applicable	
		standard	
2008 and subsequent	280 cc or greater	0.8 (HC + NOx), applied as a	12
		corporate average, [FNa2] provided	
		that each engine family shall	
		have only one applicable	
		standard	

[FNa1]

D = engine displacement of motorcycles in cubic centimeters.

[FNa2]

Compliance with a standard to be applied as a “corporate average” shall be determined as follows:

where,

n = Class III motorcycle engine families (engines with displacement of 280 cc or greater manufactured after February 28, 1985).

PROD<sub>jx</sub> = Number of units of Class III engine family j produced for sale in California in model year x

STD<sub>jx</sub> = The manufacturer designated HC or HC + NO<sub>x</sub> emission standard, whichever applies, for engine family j in model year x, which shall be determined by the manufacturer subject to the following conditions:

(1) for Model Year 1988 through 2003 motorcycle engines and motorcycles with engine displacement of 280 cc or greater, no individual engine family exhaust emission standard shall exceed 2.5 g/km HC, and

(2) for Model Year 2004 and subsequent motorcycle engines and motorcycles with engine displacement of 280 cc or greater, no individual engine family exhaust emission standard shall exceed 2.5 g/km HC+NO<sub>x</sub>, and

(3) no engine family designation or engine family exhaust emission standard shall be amended in a model year after the engine family is certified for the model year, and

(4) prior to sale or offering for sale in California, each engine family shall be certified in accordance with Section 1958(c) and shall be required to meet the manufacturer's designated HC or HC + NO<sub>x</sub> standard, whichever applies, as a condition of the certification Executive Order. Prior to certification the manufacturer shall also submit estimated production volumes for each engine family to be offered for sale in California.

STDC<sub>a</sub> = A manufacturer's corporate average HC or HC + NO<sub>x</sub> exhaust emissions, whichever applies, from those California motorcycles or motorcycle engines subject to the California corporate average HC or HC + NO<sub>x</sub> exhaust emission standard, as established by an Executive Order certifying the California production for the model year. This order must be obtained prior to the issuance of certification Executive Orders for individual engine families for the model year and shall include but not be limited to the following requirements:

(1) During the manufacturer's production year, for each engine family, the manufacturer shall provide the following information to the Executive Officer within 30 days after the last day in each calendar quarter:

(A) vehicle identification numbers and an explanation of the identification code;

(B) the total number of vehicles or motorcycle engines produced for sale in California and their applicable designated emissions standards.

(2) The manufacturer's average HC or HC + NO<sub>x</sub> exhaust emissions, whichever applies, shall meet the applicable corporate average standard at the end of the manufacturer's production for the model year.

(3) Production and sale of vehicles which result in non-compliance with the California standard for the model year shall cause a manufacturer to be subject to civil penalties, per vehicle, pursuant to Health and Safety Code Section 43154. All excess emissions resulting from final non-compliance with the California standard shall be made up in the following model year.

(4) For a period of up to one year following the end of the model year, for each model the manufacturer shall submit California sales and registration data as it becomes available.

(c) The test procedures for determining compliance with these standards are set forth in Subparts E and F, Part 86, Title 40, Code of Federal Regulations, as they existed on April 15, 1978, for 1978 through 1987 model years, and they existed on July 7, 1986, for 1988 and subsequent model years.

(1) When the word "Administrator" is used in these federal regulations, it shall mean the executive officer of the state board.

(2) When a California service accumulation vehicle is used, the California standards for Class I and II motorcycles for the manufacturer designated standards (STD<sub>j</sub>) for Class III motorcycles as defined above shall supersede corresponding federal standards in Subpart E of the federal regulations.

(3) Pursuant to the federal certification protocol under 40 CFR Section 86.432-78, a manufacturer has the option of applying an outlier test point procedure. Where the manufacturer chooses to apply the optional procedure, the California statistical outlier procedure entitled "Calculation of t-Statistic for Deterioration Data Outlier Test," dated December 17, 1976, shall be used to test for irregular data from a durability-data set. If any data point is identified by the manufacturer as a statistical outlier, the executive officer shall determine, on the basis of an engineering analysis of the cause of the outlier submitted by the manufacturer, whether the outlier is to be rejected. The outlier shall be rejected only if the executive officer determines that the outlier does not reflect representative characteristics of the emission control system anomaly, test procedure error, or an extraordinary circumstance not expected to recur. Only the identified outlier shall be eliminated; other data at that test point (i.e., data for other pollutants) shall not be eliminated unless the executive officer determines, based on the engineering analysis, that they also do not reflect representative characteristics of the emission control system. All durability test data, including any outliers and the manufacturer's engineering analysis shall be submitted with the final application.

(4) When a federal service accumulation vehicle does not meet the applicable California engine family standards, a stabilized "worst case" California configuration vehicle may be utilized to demonstrate compliance with the California standards.

Before an emission test is conducted, the vehicle shall accumulate the following applicable minimum test distance:

Class	Distance (Kilometers)
I	2500
II	2500
III	3500

The test shall be conducted at an accumulated distance within 250 kilometers (155 miles) of the nominal test distance.

A deterioration factor (DF) defined as the extrapolated useful life distance emissions divided by the interpolated minimum test distance emissions shall be computed using emissions data from the federal service accumulation vehicle. The DF shall be applied to the stabilized vehicle test data to obtain useful life emissions. The useful life emissions shall be equal to or less than the applicable California standards in order to obtain California Certification.

(d) The state board will accept the Environmental Protection Agency's Certificate of Conformity as equivalent to California Certification for model-years 1978 through 1981.

(e) Motorcycle manufacturers shall submit to the executive officer a complete copy of the application for certification submitted to the Environmental Protection Agency together with a copy of the Certificate of Conformity.

The above information shall be submitted for each engine family prior to sale or offering for sale of 1978 through 1981 model-year motorcycles.

The motorcycle manufacturers shall submit directly to the executive officer a complete copy of the application for certification for 1982 and subsequent model years.

(f)(1) Small Volume Manufacturers: Exhaust emission standards for Class III motorcycles and motorcycle engines produced by small volume manufacturers are as follows:

(A) For Model Years through 2007, Class III motorcycles and motorcycle engines shall meet the applicable HC-only and CO emission limits specified in the Table of Standards in subsection 1958(b).

(B) For Model Year 2008 and subsequent, Class III motorcycles and motorcycle engines shall emit no more than 12 grams of CO per kilometer and 1.4 grams per kilometer HC + NO<sub>x</sub>, applied as a corporate average, provided that no engine family shall emit greater than 2.5 grams per kilometer HC + NO<sub>x</sub>.

(2) To obtain certification as a small volume manufacturer pursuant to this subsection, the manufacturer shall submit product information and estimated sales data with the certification application for each engine family sold in California. As a condition of obtaining certification as a small volume manufacturer, the manufacturer shall submit annually to the Executive Officer a summary of its efforts and progress toward meeting more stringent HC + NO<sub>x</sub> exhaust emission standards. The summary shall include a description of the manufacturer's current HC + NO<sub>x</sub> emission control development status, along with supporting test data, and future planned development work.

(3) For purposes of subsection 1958(f)(1), the following provisions apply:

For Model	Small Volume Manufacturer (SVM)	Applicable
Years (MY)	definition is	Exhaust Emissions Requirements
prior to 1984	not applicable	For all manufacturers,

		Section 1958(f)(1)(A) and 1958(b) apply.
1984 through 1987	one which sells less than 5,000 new	For SVMs, 2.5 grams per kilometer HC-only and
	Class I, II, and III motorcycles per	12 grams per kilometer CO apply only to Class III motorcycles.
	model year in California	For all other manufacturers and Class I and II motorcycles,
		Section 1958(f)(1)(A) and 1958(b) apply.
1988 through 2007	not applicable	For all manufacturers, Section 1958(f)(1)(A) and 1958(b) apply.
2008 and subsequent	one which sells no more than 300	For SVMs, Section 1958(f)(1)(B) applies only to Class III
	(combined) new Class I, II, and III	motorcycles.
	motorcycles per model year in	For all other manufacturers and Class I and II motorcycles,
	California, starting with the 2004 MY.	Section 1958(b) applies.

(g) Early-Compliance Credits

(1) Manufacturers which sell Class III motorcycles or motorcycle engines in California certified as meeting either a 0.8 g/km or 0.4 g/km HC+NOx level prior to Model Year 2008 can receive credits for use in the Model Year 2008 corporate average upon written approval by the Executive Officer. Each unit of Class III motorcycle or motorcycle engine sold between Model Years 1999 and 2008 and which meets the requirements of this subsection shall be multiplied by whichever X multiplier applies, as shown in the following table:

Table of Multipliers to Encourage Early Compliance with the 0.8 g/km HC + NOx Standard and Beyond



	Multiplier (X) for Use in MY 2008 Corporate Averaging	
Model Year	Certified at 0.8 g/km	Certified at 0.4 g/km
Sold	HC + NOx or below	HC+NOx or below
1999 through 2004	1.5	3.0
2005	1.375	2.5
2006	1.250	2.0
2007	1.125	1.5
2008 and subsequent	1.0	1.0

Note: Each unit of an early compliant certified motorcycle and motorcycle engine is counted cumulatively toward the MY 2008 corporate average.

(2) Applications for early compliance credits pursuant to this subsection shall include in writing all emissions data, test protocols, equipment specifications, operating conditions, and any other technical information requested by the Executive Officer.

(3) The Executive Order approving early compliance credits under this subsection shall specify the exact amount of credits granted, the date of expiration for the credits, and all enforcement provisions applicable to the use of early compliance credits. Each motorcycle and each motorcycle that incorporates an engine for which early compliance credits have been granted pursuant to this subsection shall specify on its "California Motor Vehicle Emission Control And Smog Index Label" (Section 1965, Title 13, California Code of Regulations), in addition to all other existing requirements, the actual HC + NOx engine family exhaust emissions level for which the vehicle or engine has been granted early compliance credit.

(h) Sunset Review

Within five years from the effective date of adoption or date of implementation, which ever comes later, the Air Resources Board, in consultation with the Secretary for Environmental Protection, shall review the provisions of this section to determine whether it should be retained, revised, or repealed.

Note: Authority cited: Sections 39600, 39601, 43013, 43101, 43104, and 43107, Health and Safety Code. Reference: Sections 39002, 39003, 43000, 43013, 43100, 43101, 43104, and 43107, Health and Safety Code; and Cal. Stats. 83, Ch. 103.

HISTORY

1. Editorial correction of subsections (c) and (e) (Register 83, No. 17).

2. Amendment filed 11-23-83; effective thirtieth day thereafter (Register 83, No. 48).
3. Amendment of subsection (b) filed 1-24-85; effective thirtieth day thereafter (Register 85, No. 4).
4. Amendment of subsection (f) filed 5-6-86; effective thirtieth day thereafter (Register 86, No. 19).
5. Amendment filed 3-3-88; operative 4-2-88 (Register 88, No. 12).
6. Amendment of section heading and section filed 11-22-99; operative 12-22-99 (Register 99, No. 48).
7. New subsection (c)(5) and amendment of Note filed 12-5-2007; operative 1-4-2008 (Register 2007, No. 49).
8. Repealer of subsections (c)(5) and amendment of Note filed 11-8-2010; operative 12-8-2010 (Register 2010, No. 46).

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