



**CALIFORNIA CERTIFICATION PROCEDURES FOR LIGHT-DUTY ENGINE
PACKAGES FOR USE IN NEW LIGHT-DUTY SPECIALLY-PRODUCED MOTOR
VEHICLES FOR 2019 AND SUBSEQUENT MODEL YEARS**

Adopted: June 17, 2019

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NOTE: This document is incorporated by reference in title 13 California Code of Regulations (CCR) sections 2209 through 2209.10. It contains the majority of the requirements necessary for certification of a new certified engine package, as defined in section 2209.1.(a) for sale in California, in addition to containing the exhaust and evaporative emission standards and test procedures for these certified engine packages.

For the purpose of this procedures, the term CARB refers to the California Air Resources Board, and the term “Executive Officer”, means the Executive Officer of the California Air Resources Board or his or her authorized representative or designee.

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1. Applicability.

This document consists of certification procedures for evaluating and certifying certified engine packages, as defined in section 2209.1.(a) of title 13 California Code of Regulations (CCR).

2. Definitions.

Unless a term is defined in these certification procedures, the definitions in title 13 CCR section 2209.1 shall apply.

3. Emissions Standards.

The exhaust emissions standards applicable to certified engine packages are specified in title 13 CCR sections 2209.2(d)(1) through (5).

The evaporative emissions standards applicable to certified engine packages are specified in title 13 CCR section 2209.2(5)(e).

4. Worst Case Vehicle.

The criteria for determining the worst case vehicle, as defined in title 13 CCR section 2209.1(a)(25), for a certified engine package are set forth below:

- (a) CARB will consider the “worst case” a vehicle configuration with a vehicle test weight, vehicle road load, vehicle frontal area, calibration, emission control system configuration and calibration, transmission, engine displacement, and engine speed to vehicle speed (N/V) ratio which (1) with respect to emission deterioration over the vehicle’s useful life, produces the greatest stress on the emission related components or (2) with respect to certification testing, has the greatest probability of exceeding any of the applicable emission standards.
- (b) CARB will consider the “worst case” vehicle for evaporative emissions purposes to be a light duty vehicle which produces the highest evaporative emissions. The following criteria shall be considered when selecting the worst case vehicle: the canister working capacity, fuel tank vapor space, fuel tank configuration, and purge flow.

5. Vehicle Testing.

- (a) Exhaust emissions. The engine manufacturer must demonstrate compliance with these procedures by showing that the exhaust emissions from the worst case vehicle with the certified engine package installed are in compliance with the applicable California new vehicle exhaust emission standards for the vehicle class and model year of the test vehicle in either title 13 CCR section 2209.2.(d)(1)(A) or section 2209.2.(d)(1)(B), when tested in accordance with the following test procedures:

- (1) LEV II and LEV III Exhaust Emission Standards.

- (A) The test procedures for determining compliance with the LEV II and LEV III exhaust emission standards in title 13 CCR section 2209.2.(d)(1)(A) and (B) are set forth in the “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium-Duty Vehicles” as last amended September 2, 2015, which are incorporated by reference herein.

- (2) “50° Exhaust Emission Standards.”

- (A) Compliance with the LEV III 50°F exhaust emission standards in

title 13 CCR section 2209.2(d)(2) for NMOG+NO_x and formaldehyde (HCHO) must be demonstrated by measuring those emissions as specified by Part II, Section D of “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium-Duty Vehicles” as last amended September 2, 2015, which are incorporated by reference herein. A manufacturer may demonstrate compliance with the NMOG+NO_x and HCHO certification standards contained in this subparagraph by measuring NMHC exhaust emissions or issuing a statement of compliance for HCHO in accordance with Section D.1.10 and Section G.3.1.2, respectively, of the “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium-Duty Vehicles” as last amended September 2, 2015, which are incorporated by reference herein.

(3) “Highway NO_x Standard” and “Highway NMOG+NO_x Standard.”

- (A) LEV II Highway NO_x Standard for Certified Engine Packages Subject to title 13 CCR section 2209.2.(d)(3)(A).

The maximum emissions of oxides of nitrogen (NO_x) measured on the federal Highway Fuel Economy Test (HWFET) as specified by “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” which are incorporated by reference herein), must not be greater than the applicable LEV II NO_x standard set forth in title 13 CCR section 2209.2.(d)(3)(A). Both the projected emissions and the HWFET standard shall be rounded in accordance with the ASTM E 29-67, effective November 1, 1967 (Reapproved 1973), incorporated by reference herein, to the nearest 0.01 g/mi before being compared.

- (B) LEV III Highway NMOG +NO_x Standard for Certified Engine Packages Subject to title 13 CCR section

2209.2(d)(3)(B).

The maximum emissions of non-methane organic gas plus oxides of nitrogen measured on the federal HWFET must not be greater than the applicable LEV III NMOG+NOx standard set forth in title 13 CCR section 2209.2.(d)(3)(B). Both the sum of the NMOG+NOx emissions and the HWFET standard must be rounded in accordance with ASTM E 29-67 to the nearest 0.001 g/mi before being compared.

(4) "Supplemental Federal Test Procedure (SFTP) Off-Cycle Emission Standards."

(A) Certified Engine Packages Subject to LEV III standards in title 13 CCR section 2209.2.(d)(4)(A)

Compliance with the LEV III SFTP Off-Cycle Emission Standards in title 13 CCR section 2209.2.(d)(4)(A) must be demonstrated in accordance with the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles", as last amended September 2, 2015, which are incorporated by reference herein.

(b) Evaporative Emissions. The engine manufacturer must also demonstrate compliance with these procedures by showing that the evaporative emissions from the worst case vehicle with the certified engine package installed is in compliance with the California new vehicle evaporative emission standards for the vehicle class and model year of the test vehicle in section 1976, title 13 CCR. The test procedures for determining compliance with the evaporative emission standards are set forth in "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles", as last amended September 2, 2015, which are incorporated by reference herein.

(c) Grouping of Engines and Evaporative Emissions Control System (ECS).

(1) This procedure shall apply to each certified engine package type separately, except that a manufacturer may group engines in the same engine family for the purpose of selecting one representative emissions test engine and establishing deterioration factors (DF). If grouping of

certified engine packages is approved, CARB will issue one Executive Order (EO) covering all engine models in the group. The engine family criteria in title 40, Code of Federal Regulations (CFR), section 86.1827-01, last amended May 7, 2010, which is incorporated by reference herein, should be used to determine whether one engine may represent other engines for testing and establishing DFs.

- (2) Evaporative ECS should be grouped into evaporative families per title 40 CFR section 86.1821-01, last amended April 28, 2014, which is incorporated by reference herein. Evaporative ECS components are those components which may contribute to fuel evaporative emissions or running loss emissions, and components designed to control evaporative emissions. Evaporative ECS components may include, but are not limited to, canister, purge valve, roll-over valve, fuel lines, hoses, connectors, fuel tank, fuel cap seal, fuel pump seals (non-immersed pump only), and fuel injection system (fuel injectors, fuel rail, pressure regulator, etc.). If the evaporative component is not required to be provided, or offered in the certified engine package to the ultimate purchaser, use components recommended in the engine manufacturer's installation manual.
- (d) The certified engine package must be installed in the worst case vehicle in accordance with the instructions the engine manufacturer provides to its ultimate purchasers. The worst case vehicle with the certified engine package installed must meet the accumulation requirements of title 40, CFR, section 86.1828-01, last amended April 28, 2014, which is incorporated by reference herein.
- (e) Subject to advance approval by the Executive Officer, manufacturers may utilize carryover of previously generated emission data, from a previously certified vehicle with a similar certified engine configuration of the engine package for which the engine manufacturer seeks to obtain certification.
- (f) Confirmatory Testing. If requested by the Executive Officer, any test vehicle must be submitted to the California Air Resources Board, at such place or places as the California Air Resources Board may designate, for the purposes of conducting confirmatory emissions tests. The Executive Officer will also allow specify that such testing be conducted at the engine manufacturer's selected laboratory facility, in which case instrumentation and equipment specified by the Executive Officer must be made available by the engine manufacturer for test operations. Confirmatory testing will be performed within 30 days after CARB's receipt of all required vehicle emission test data. If the confirmatory test results

indicate that any regulated pollutant exceed the applicable standards, the California Air Resources Board will deny the engine manufacturer's certification request.

6. Delivery of certified engine package to specially produced motor vehicle (SPMV) manufacturers.

- (a) When a manufacturer delivers a certified engine package that has been certified under this procedure to a SPMV manufacturer, the following components must also accompany the engine:
 - (1) The certified engine package must include an evaporative canister, purge valve, and purge control logic.
 - (2) The certified engine package must include a complete exhaust emission system with all critical components included. A manufacturer must also provide a statement that the certified engine package is not legal for use in an SPMV unless all required exhaust and evaporative controls are installed.
- (b) In addition to the components above, the following written materials must accompany the engine package:
 - (1) The engine manufacturer must furnish with each certified engine package written instructions for the required maintenance and use of the certified engine package by the ultimate purchaser, and the written instructions shall be consistent with this section and must meet the contents and format requirements of title 40 CFR, section 1051.130, adopted July 13, 2005, which is incorporated by reference herein (References in that CFR section to the federal emission standards shall mean California exhaust and evaporative emission requirements).
 - (A) The engine manufacturer must include fuel tank assembly specifications, e.g., tank material, maximum fuel capacity, maximum vapor volume, minimum distance from the engine, gas cap seals, filler neck, pressure/vacuum relief settings, etc. in the installation manual to ensure that the assembled vehicle will comply with the evaporative emission standard. Additionally, the nozzle access zone and the filler neck area, including the filler neck face, shall be free of sharp

projections or edges which could foreseeably damage the bellows and faceplates of fuel vapor recovery nozzles during fueling activity.

- (B) The engine manufacturer must submit the above instructions with the engine manufacturer's preliminary application for each certified engine package for approval by the Executive Officer.
 - (C) The engine manufacturer must include instructions that the certified engine package must be installed in the vehicle such that Smog Check inspections can effectively be performed on the vehicle.
 - (D) The Executive Officer will reject or require modification of written instructions for, among other reasons, incompleteness. Approval by the Executive Officer of the written instructions shall be a condition of certification.
- (2) A statement that the certified engine package, exhaust ECS, and evaporative ECS must be installed in SPMVs with an engine speed to vehicle speed (N/V) ratio less than the N/V ratio of the worst case vehicle and below the weight of the worst case vehicle. The statement must specify the N/V ratio and weight limits not to be exceeded. This statement may be included in the written instructions, in paragraph (1) above.
 - (3) A statement that no changes may be made to the certified engine package and evaporative ECS, including, but not limited to: changes to the fuel metering system; changes to the ignition system, changes to the camshaft; and modifying, recalibrating, removing, or failing to properly install any other specified component. This statement may be included in the written instructions, in paragraph (1) above.
 - (4) A statement that failure to meet the requirements of paragraphs (1) through (3) above will cause the vehicle to violate CARB's certification requirements which may subject the SPMV manufacturer to the penalty provisions of Part 5, Division 26 of the Health and Safety Code. Penalties can be applied. This statement may be included in the written instructions, in paragraph (1) above.
 - (5) A label that meets the requirements of section 2209.5, title 13 CCR, and an explanation of where and how the label is to be permanently attached on the vehicle.

An engine owner's manual that is to be provided to the ultimate purchaser. The owner's manual provided by the engine manufacturer must contain maintenance instructions. The owner's manual must contain a statement that disconnecting, modifying, or altering any emission control system on a certified engine package constitutes illegal tampering that is prohibited by state law.

- (6) A notice, printed on a separate sheet of paper, explaining the documentation, record keeping, notification, and access to records requirements for SPMV manufacturers of certified engine package in the state of California.
- (7) An affidavit, which must be completed by the SPMV manufacturer indicating that all of the above-described requirements for the proper installation of the certified engine package and the record keeping and notification requirements have been read and understood. Provide a mailing address for the affidavit to be sent.
- (8) A warranty card requesting the SPMV make and model, the serial number of the certified engine package installed, vehicle identification number, the date of installation, and the SPMV manufacturer's name (and company as applicable). Provide a mailing address for the warranty card to be sent.

7. Manufacturer Production Reporting.

A manufacturer certifying engine packages under this procedure shall submit to CARB a report that provides the total number and serial numbers of certified engine packages produced for the model year, as specified in section 2209.2(k), title 13 CCR, by June 30 of the year following the model year of the certified engine packages. For example, manufacturer reports would be due by June 30, 2020, for model year 2019.

8. Application.

A manufacturer that desires to have an engine package certified under this procedure must submit a copy of the written application required herein that demonstrates compliance with each of the requirements specified in title 13 CCR sections 2209 through 2209.10 and the requirements specified in these certification procedures.

Manufacturers planning to obtain CARB certification for the first time should send a "Letter of Intent" to certify engines in California to:

Chief
Emissions Certification and Compliance Division
California Air Resources Board
9480 Telstar Avenue, Suite 4
El Monte, CA 91731

The Letter of Intent should include general information on the company's product offering and contact information including (i) persons authorized to sign documents for submittal to CARB, (ii) persons authorized to submit signed documents to CARB, and (iii) persons authorized to communicate with CARB staff during the certification review process. Upon receiving the "Letter of Intent", the CARB will assign a manufacturer code to the engine manufacturer and register the authorized personnel in CARB's electronic submittal system. Thereafter, all certification related documents must be submitted electronically according to a format to be provided by the CARB.

9. Issuance of Executive Orders (EO).

CARB will issue an EO to the engine manufacturer for a certified engine package that complies with the requirements of title 13 CCR sections 2209 through 2209.10 and these certification procedures.

10. Requirements for SPMV Manufacturers.

An SPMV Manufacturer shall adhere to the following requirements:

- a) A SPMV manufacturer must be currently approved by the National Highway Traffic and Safety Administration and registered with the United States Environmental Protection Agency to produce for the current model year of the SPMV certification application.
- b) A SPMV manufacturer shall install a certified engine package in accordance with installation instructions provided by the engine manufacturer, acquire other necessary parts per the engine manufacturer's instructions and install according to the engine manufacturer's instructions;
- c) A SPMV manufacturer shall not install a certified engine package in a vehicle

that exceeds the weight or N/V limits used to certify the certified engine package;

- d) A SPMV manufacturer shall not modify the certified engine package and emission related components provided by the engine manufacturer;
- e) A SPMV manufacturer shall permanently affix the required manufacturer's emission label in a readily accessible location on the SPMV as specified by the engine manufacturer and according to section 2209.5;
- f) The SPMV manufacturer shall also permanently affix their own vehicle information label in a readily accessible and visible location on the SPMV and must meet the emissions labeling requirements as new passenger vehicles. In addition to those requirements, the label must clearly states the SPMV manufacturer's name and address, state that the vehicle is a replica, and designate the make, model, model year such vehicle replicates, and build completion date;
- g) A SPMV manufacturer shall maintain, for a period of not less than five years, written and photographic records documenting (1) the N/V ratio; (2) weight; (3) evaporative canister installation (photograph required); (4) installation of the label meeting the requirements of section (b)(5) above (photograph required); (5) the appearance of the finished SPMV from both the right and left sides (photographs required); and (6) for ECS using one or more oxygen sensors, photographic evidence that the oxygen sensors were installed in the proper location. A SPMV manufacturer shall, upon request, provide such written and photographic records to CARB within 10 working days;
- h) A SPMV manufacturer shall notify CARB of the location where installation of a certified engine package into SPMV will be performed, where inspections can be conducted, and where records will be kept;
- i) A SPMV manufacturer shall report to CARB all certified engine packages installed in SPMVs each year covering the prior calendar year. Reports shall include vehicle make and model, engine make and model, engine serial number, and SPMV Identification Number;
- j) A SPMV manufacturer shall provide an installation warranty of 1 year or 12,000 miles and provide a statement under penalty of perjury, that it installed the certified engine package in accordance with the engine manufacturer's installation instructions;

- k) A SPMV manufacturer shall provide a warranty of 3 years or 50,000 miles for supplied and installed fuel tank assembly, fuel hoses, fuel pump, fuel filler neck, gas cap, and fuel sender unit, is free from defects in materials and workmanship which cause the failure;
- l) A SPMV manufacturer shall complete and return to the engine manufacturer an affidavit, as provided by the engine manufacturer, that the certified engine package has been installed per the engine manufacturer's instructions into a SPMV. A copy of the completed affidavit must also be given to the SPMV owner;
- m) A SPMV manufacturer shall not install in a new SPMV any certified engine package which was manufactured by the engine manufacturer more than twenty-four (24) months prior to the date of installation in the SPMV; and
- n) Offering for sale or selling SPMVs that do not comply with all the provisions of this Article shall subject a SPMV manufacturer to civil penalties and revocation of any applicable Executive Order.

11. SPMV Manufacturer Production Reporting.

A SPMV manufacturer shall report to CARB all SPMVs sold for use in California at the end of the calendar year (a maximum of 60 days after December 31). The reports shall include vehicle make and model, certified engine package installed, engine serial number, and SPMV Identification Number.

12. SPMV Manufacturer Application.

An SPMV manufacturer planning to commence installation of certified engine package for California certification for the first time shall send a "Letter of Intent" to commence such installation to:

Chief
Emissions Certification and Compliance Division
California Air Resources Board
9480 Telstar Avenue, Suite 4
El Monte, CA 91731

- a) Copies of the filed federal registrations required by subsection 10(a) above;

- b) An executive order number and description of the certified engine package to be installed into the SPMV models;
- c) Persons authorized to sign documents for submittal to CARB;
- d) Persons authorized to submit signed documents to CARB; and
- e) Persons authorized to communicate with CARB staff during the certification review process. Upon receiving the "Letter of Intent", CARB will assign a manufacturer code to the SPMV manufacturer and register the authorized personnel.

13. Issuance of Executive Orders (EO).

CARB will issue an EO to the SPMV manufacturer for a SPMV that complies with the requirements of title 13 CCR sections 2209 through 2209.10 and these certification procedures.

14. Emissions Control System Warranty Statement.

Each manufacturer shall furnish a copy of the following statement with each certified engine package for use in SPMVs:

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board (and manufacturer's name, optional) is pleased to explain the emission control system warranty on your (year) engine. In California, new motor vehicle engines must be designated, built, and equipped to meet the State's stringent anti-smog standards. (Manufacturer's name) must warrant the emission control system on your engine for the period of time listed below provided there has been no abuse, neglect, or improper maintenance of your engine, or improper installation of your engine package.

Your emission control system may include parts such as the carburetor or fuel-injection system, the ignition system, catalytic

converter (or other after-treatment device), and engine computer. Also included may be hoses, belts, connectors, and other emission-related assemblies. Where a warrantable condition exists, (manufacturer's name) will repair your engine at no cost to you, including diagnosis, parts, and labor.

MANUFACTURER'S WARRANTY COVERAGE:

For 2019 and subsequent model year engines sold for use in SPMVs.

For 3 years or 50,000 miles (or a longer period of time or mileage, optional), whichever first occurs.

If your SPMV with certified engine package fails a Smog Check inspection, or if any emission-related part on your certified engine package is defective, the defective part and/or all necessary repairs and adjustments will be made by (manufacturer's name) to ensure that your SPMVs with certified engine package passes the Smog Check inspection.

ULTIMATE OWNER'S WARRANTY RESPONSIBILITIES:

- As the SPMV owner, you are responsible for the performance of the required maintenance listed in your owner's manual. (manufacturer's name) recommends that you retain all receipts covering maintenance on your certified engine package, but (manufacturer's name) cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- You are responsible for presenting your certified engine package- equipped SPMV to a (manufacturer's name) authorized repair facility as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.
- As the SPMV owner, you should also be aware that (manufacturer's name) may deny you warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance, improper installation, or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact (insert chosen manufacturer's contact) at (insert manufacturer's phone number) or the California Air Resources Board at 9528 Telstar Avenue, El Monte, CA 91731.

15. Warranty Card.

The engine manufacturer shall provide a warranty card, or online warranty registration equivalent, with each certified engine package intended for California sale or use. The warranty card shall be supplied and filled out in triplicate; the original for the customer, one copy for the SPMV manufacturer to keep (if applicable), and one copy to be sent back to the engine manufacturer. The copy to be returned to the engine manufacturer shall have pre-paid postage and be of sufficient size to allow for mailing without the use of a separate envelope.

The warranty card shall include the following:

- (a) The general terms and conditions of the emission control warranty;
- (b) A statement that the certified engine package has been designed and manufactured to meet the warranty requirements;
- (c) A place for the customer's signature in acknowledgement of the emission control warranty;
- (d) The engine serial number; and
- (e) The vehicle model year, make, and model the certified engine package was installed.

16. Violations and Penalties.

Violations of these procedures are subject to the penalty provisions of Part 5 of Division 26 of the Health and Safety Code, and may subject the violator to the revocation of any applicable Executive Order.