

Regulations Governing the Issuance, Revocation and Abolition of Compliance Certification for Motorcycle Configuration Exhaust Emission

Article 1 The Regulations are established pursuant to Paragraph 2, Article 42 of the Air Pollution Control Act (hereinafter referred to as the Act).

Article 2 Terms used in these Standards are defined as follows:

1. Motorcycle model composition patterns (hereinafter referred to as Motorcycle configuration): Refers to when the power system of the motorcycle (such as internal combustion engine or hybrid power system with an electric motor, etc.), basic engine, fuel supply system, emission control system, transmission, and inertial mass are the same, then they are of the same model.
2. Engine family: Motorcycles have similar power system, combustion cycle (number of strokes), type of cooling system (air, seawater), cylinder block structure (i.e. parallel, V-type, opposite type, cylinder aperture center spacing distance, etc.), number of cylinders, air supply method, fuel supply (method, numbers and measuring systems, etc.), evaporated gas storage device, catalytic converters (oxidation catalyst, reduction catalyst or three-way catalytic), secondary air system, electronic control module vehicle can be summarized as the same engine family.
3. In-use motorcycles from overseas: Motorcycles registered and licensed by the motor vehicle supervisory agencies of the country of importation must obtain an import and commodity tax payment (exemption) certificate issued by Customs at the time of importation as documentary proof.
4. On Board Diagnostics System (hereinafter referred to as OBD): A computer system inside the motorcycles that monitors motorcycle emissions control equipment and can diagnose current operating status, detect and save malfunction codes, and display the signal indicator if malfunctions occur.
5. Hybrid motorcycle: Refers to motorcycles with both internal combustion engines and electric motor-generator system.
6. Idle-stop or stop-start devices: Devices which while a moving motorcycle temporarily stops for traffic lights, etc., may maintain the motorcycle in an idle state for a while and then have the engine enter the off-state automatically, but can re-start the engine once the throttle is opened.
7. Defeat devices: Devices which, by measuring, sensing or affecting the motorcycle's operating parameters (such as speed, engine RPM, transmission gear position, temperature, altitude, intake manifold vacuum, or other parameters), may trigger, adjust, delay or stop the operation or emissions control functionality of some part when the motorcycle is in normal operating condition and hence reduce the effect posed to, or render no effect on, the emissions control.

8. Inspection organization: An organization (institution) or school that has been designated by the central competent authority to issue the inspection report for a motorcycle configuration's emission Certificate of Conformity (hereinafter referred to as a Certificate of Conformity).
9. Evolution coefficient: The exhaust emission ratios between the motorcycle reaching its expected stable condition and before the motorcycle is in use.

Article 3 Motorcycles shall comply with Article 6 and Article 7 of the Air Emission Standards of Mobile Sources (hereinafter referred to as the Emission Standards) defined in Paragraph 2, Article 36 of this Act, as well as relevant requirements herein, before the central competent authority issues the Certificate of Conformity.

Article 4 The applicant using engine family as the basis to apply for a Certificate of Conformity shall abide by the following regulations:

1. For domestically manufactured motorcycles, the manufacturer shall submit the application.
2. For imported motorcycles, the manufacturer's agent, importers, associations formed by importers or non-profit-seeking organizations formed by importers shall submit the application.
3. For motorcycles procured and imported by various administrative agencies, the agencies shall submit the application by themselves or winning tenderers on behalf of them.

Article 5 The central competent authority shall use the test results from the following test methods as the basis for judging whether or not an engine family complies with the emission standards:

1. The tests shall be conducted by the testing organization domestically according to the following requirements for the vehicles representing the maximum pollutant emission for such engine family that has been selected by the central competent authority or the applicant:
 - (1) Before February 28, 2025: Refers to the testing organizations designated by the central competent authority.
 - (2) After March 1, 2025: Refers to the testing organizations approved by the central competent authority.
2. For an engine family which has obtained the Certificate of Conformity issued by the United States or United Kingdom in accordance with the regulations of the European Union (EU) or UN/ECE, the testing results for the motorcycles representing the engine family shall apply.

If the testing organization approved by the central competent authority, as defined in Item 2 under subparagraph 1 of the preceding paragraph, is assigned by the applicant, then such organization shall not be allowed to conduct the motorcycle configuration inspection or new motorcycle random test.

The emission test applicable to the motorcycle configuration inspection as defined in Paragraph 1 shall be conducted according to the regulations specified in Appendix 1.

Article 6

When using the engine family as the basis to apply for or to modify the Certificate of Conformity, the applicant shall submit the application to the central competent authority by submitting the documents and meeting the compliance requirements in Appendix 1 and Appendix 2, in the format defined in the network transmission application system designated by the central competent authority.

As of January 1, 2025, the applicant shall submit the documents and the compliance matters according to the aforementioned application method and format for securing the inspection report from the inspection organization and then uplink to the Network Transmission Application System designated by the central competent authority. In this case, the expenses required for the inspection shall be borne by the applicant.

Article 7

The review procedure upon the inspection organization's receipt of the application for the inspection report is specified as follows:

1. The inspection organization shall check the integrity of the document. If any missing information or non-compliance is found in the application document, the inspection organization shall inform the applicant to make corrections with the duration of the period for correction not exceeding 30 days. If the applicant fails to complete the corrections within the specified timeline, then the submitted document will be rejected.
2. After verifying the document's integrity for the application case, the inspection organization shall also check if said document complies with the requirements defined in Appendix 1 and Appendix 2.
3. If any defect exists in the content of the inspection case, then the inspection organization shall inform the applicant to make a corrections with the duration of the period for correction not exceeding 45 days. If required, the applicant may request to extend the correction period; however, such an extension shall be limited to once only. If the applicant fails to complete the corrections within the specified timeline, then the inspection organization may conduct the document review.
4. The inspection organization shall issue the inspection report.

When conducting the aforementioned review, the inspection organization may undertake field and substantive inspections as required. The aforementioned inspections shall include monitoring of the testing process being executed by the applicant in the domestic premise or the auditing in the applicant's manufacturing plant or service location. In this regard, the entire inspection process shall be completed within 30 days.

Article 8 When revising part of the engine family-related data for the same engine family or when adding any new motorcycle configuration, the applicant shall apply for modification of Certificate of Conformity with the central competent authority, and also submit the comparative data being acquired before and after the modification. When all of the items affecting the pollutant emissions are proven to be identical to the original engine family and have the same emission characteristics, then the applicant shall be allowed to modify the Certificate of Conformity of said engine family upon review and approval by the central competent authority.

Article 9 Mass production motorcycles that have obtained the Certificate of Conformity shall comply with the following requirements:

1. Each mass produced motorcycle shall have the same configuration recorded in the Certificate of Conformity. All items affecting the pollutant emission and the emission control system shall be consistent with the contents and approved items that are mentioned in the application documents, which have already been reviewed and approved.
2. Any manuals and instructions made available by the applicant to any agents, distributors, after-sale service units (including depots and stations providing maintenance and repair services) and motorcycle owners, and any use, repair, adjustment, maintenance or test related to emission control systems, shall be consistent with the contents and approved items that are mentioned in the application documents which have already been reviewed and approved.
3. The applicant shall undertake the mass production quality controls, including the quality controls over new motorcycles and in-use motorcycles. The applicable execution requirements, quality control test items, random inspection ratio and testing result (including related data), and testing result submission schedule shall be handled in accordance with Appendix 3. Regarding motorcycles for which quality control results do not meet the emission standards and requirements referred to herein, the applicant shall explain the reasons causing the non-conformity and make corrections within 30 days from the date when the non-conformity is found.
4. The applicant shall coordinate with and assist the central competent authority to conduct the audit and designated tests and shall also provide motorcycle-related sales information. When required, the applicant shall help deliver the selected motorcycle to the designated location.

Where the applicant violates the provisions of the preceding paragraph, the central competent authority may increase the number of new motorcycles subject to random tests, suspend the verification and

authorization process, or suspend the application for the Certificate of Conformity.

Article 10 The central competent authority may conduct the new motorcycle random test on motorcycles that have already obtained the Certificate of Conformity. The test procedures, selection of motorcycles, evaluation of the test result, and other compliance requirements shall be handled in accordance with Appendix 4. Where the applicant fails to work with the central competent authority to complete the new motorcycle random test, the central competent authority may suspend the applicant's verification and authorization process.

If the new vehicle random inspection conducted is non-compliant, the Certificate of Conformity for the said engine family shall be cancelled. After receiving the notice, within 30 days, the applicant shall submit a recall and correction plan for unsold and sold vehicles of the failed engine family. If the central competent authority reviews and approves the plan, the applicant shall start to implement and complete the plan. After completing all the necessary measures, the applicant may reapply for the engine family's Certificate of Conformity. The contents of the recall and correction plan shall be in accordance with Appendix 4.

Article 11 When importing newly manufactured motorcycles or in-use motorcycles from overseas separately under a personal name, the applicant shall submit the following testing reports in place of the Certificate of Conformity for each motorcycle:

1. The testing report prepared by the central competent authority-approved testing organization verifying that the motorcycle complies with Article 6 of the Emission Standards (for the deterioration factors, please apply the provisions of Appendix 1).
2. If said motorcycle is found by the central competent authority-approved testing organization as not having been equipped with the evaporative emission control system or components thereof, or if the installed evaporative emission control system or components thereof fail to operate effectively such that the motorcycle may cause pollution, then the applicant shall submit the testing report that is issued by the central competent authority-approved testing organization indicating that it complies with Article 7 of the Emission Standards.
3. If the central competent authority-approved testing organization cannot test the motorcycle, then the applicant may submit the testing result report that has been evaluated by the central competent authority as meeting the Emission Standards.

If an in-use motorcycle imported from overseas is defined as an antique motorcycle in the Regulations Governing Road Traffic Safety, the requirements specified in the preceding paragraph may be exempted.

Article 12 An applicant, with an annual domestic sales volume of new motorcycles equipped with internal combustion engines exceeding ten thousand units,

shall produce or import motorcycles with idle-stop function, hybrid motors, or electric motors in accordance with the ratios defined in Article 6 of the Emission Standards as of 2017. The calculation of such ratios shall be rounded up to the nearest whole digit.

If applicants sell domestic and imported motorcycles simultaneously, domestic and imported motorcycle quantities can be merged or separated to calculate the ratio.

If the applicant fails to attain the ratios referred to in Paragraph 1, in addition to the Certificate of Conformity for motorcycles with idle-stop function, hybrid motors or electrical motors, the central competent authority may also suspend the issuance of that for the other motorcycles.

Article 13 Where the Certificate of Conformity issued by the central competent authority meets any of the following circumstances, the central competent authority may revoke or abandon the Certificate of Conformity, and may require the applicant to recall and correct it in accordance with the provisions of Appendix 4:

1. Using any false document in the application, reporting false information, or keeping false records of operations.
2. Violating the provisions of Article 9 for 3 consecutive times within two years without making improvement within the time limit.
3. Other severe offenses determined by the central competent authority to be in violation of this Act or these provisions.

Article 14 The central competent authority may contract any agencies (organizations) to handle the relevant matters related to the new motorcycle random test.

Article 15 The Regulations shall be enforced as of the date of promulgation.

Appendix 1: Exhaust emission testing and regulations applicable for vehicle model inspection

1. Selecting the vehicles required for conducting the inspection and testing of a Certificate of Conformity

The application for the Certificate of Conformity shall be filed subject primarily to the engine family. The vehicles representing the engine family shall be selected in the following manner:

- 1.1 The vehicle configuration expected to derive the highest emission pollution from any engine family shall be selected for the exhaust emissions test. The vehicle with the greatest loaded weight (including optional accessories) shall be selected. Notwithstanding, when different vehicle configurations have identical loaded weight, the one with the greatest road resistance (at 80 kph) set in the dynamometer shall be selected. If the road resistance is identical, the largest size of engine displacement shall be selected for testing. In the case of identical exhaust volume, the one with the greatest total gear ratio numbers (including the overdrive (OD) device) shall be selected.
- 1.2 One vehicle configuration with the highest expected evaporative emission value shall be selected within the engine family. If it is impossible to do so, the representative vehicle configuration may be selected according to the fuel system installation conditions and the materials that are being used.
- 1.3 If the central competent authority considers that the vehicles selected by the applicant referred to in the preceding two paragraphs can not be representative of the pollutants emitted by said engine family, the central competent authority may designate other vehicle configurations within the same engine family as the vehicles to be tested.
- 1.4 All vehicles selected for the testing shall be completely assembled and ready for normal driving and stable operation.
- 1.5 When importing vehicles that are classified as the same engine family and that are manufactured in or imported from different countries, the vehicles shall be selected respectively for carrying out the test, except for those engine families that have been granted the Certificate of Conformity issued by EU members or the United Kingdom, to the agent designated by the imported motorcycle manufacturer, in accordance with the Regulations (EC).

2. Vehicle testing items and basic regulations

- 2.1 The applicant shall provide information about the vehicles to be tested, such as specifications, maximum speed (with the original manufacturer's official data), basic engine information, power system, fuel supply system, transmission system, descriptions and schematic diagrams of the exhaust emissions control system and its location, adjustable parameters related to emission pollution and their suggested setting values, and photos showing the vehicles and emissions control system, etc.
- 2.2 The test on pollution emissions of vehicles shall be conducted in any of the following manner:
 - 2.2.1 To be executed in accordance with the "Test Method and Procedure for Motorcycle Exhaust Emissions," "Test Method and Procedure for

Motorcycle Durability” and “Method and Procedure for Motorcycle Evaporative Emissions.”

2.2.2 For an engine family for which the Certificate of Conformity, as issued by EU members or the United Kingdom in accordance with the Regulations (EC) No. 168/2013 and subsequent directives thereto, has already been received by the agent designated by the imported motorcycle manufacturer or locally-made motorcycle manufacturer, which meets the emission standards and related laws & regulations of Taiwan, and for which the specifications related to all vehicle configurations (including software and hardware) are identical with the contents recorded in the Certificate of Conformity issued by EU or the United Kingdom (provided that in the case of locally-made motorcycles, the motorcycle manufacturer specified in the Certificate of Conformity issued by EU or the United Kingdom shall be the local manufacturer with identical address), the test results recorded in such Certificate of Conformity for the vehicles representing the engine family shall apply.

2.3 In motorcycles with an idle-stop function, when conducting emission tests, the idling stop switch shall be in one position. In the case of hybrid electric motorcycles with manual switches for different power operation modes, the emission tests shall be conducted under hybrid operation mode.

2.4 The deterioration factors of said engine family shall be multiplied by or be added to the results of all the new vehicle tests, including new vehicle configuration tests, new vehicle quality control tests and new vehicle random tests (applicable to applicants who adopt the Certificate of Conformity issued by EU members or the United Kingdom and who perform the durability test). The evaporative emission test results shall serve as the basis to determine compliance with the emission standards in accordance with the “Method and Procedure for Motorcycle Evaporative Emissions.” Before comparison with various emission standards, it shall be rounded up to the next decimal place of the emission standard value and then rounded off.

2.5 The applicant shall determine the minimum mileage of the respective engine family required to achieve the stabilized emission value when conducting respective tests, including new vehicle configuration tests, quality control tests and new vehicle random tests, provided that the break-in accumulation mileage shall not exceed 1,500 kilometers.

2.6 With the consent of the central competent authority, the agent designated by the imported motorcycle manufacturer may designate the imported motorcycle manufacturer to conduct the OBD test at the testing laboratory set up by the manufacturer overseas, at the applicant’s own expense.

3. Deterioration Factors

3.1 For an engine family generating an annual sales volume of more than 200 units, it is necessary to conduct the real motorcycle durability test in accordance with the “Test Method and Procedure for Motorcycle Durability” to verify the deterioration factors. The durability test plan and deterioration

factors shall be submitted to the inspection organization to confirm the inspection data. Then, the inspection data may be adopted upon approval of the central competent authority.

- 3.2 When executing the driving cycle test, the engine family generating an annual sales volume of more than 200 units may identify the following designated values as its deterioration factors (applicable to multiplication):
 - 3.2.1 CO: 1.400
 - 3.2.2 HC: 1.400
 - 3.2.3 NMHC: 1.400
 - 3.2.4 NO_x: 1.400
 - 3.2.5 PM: 1.100
- 3.3 For an engine family for which the Certificate of Conformity as issued by EU members or the United Kingdom in accordance with the Regulations (EC) No. 168/2013 and subsequent directives thereto, has already been received by the agent designated by the imported motorcycle manufacturer or locally-made motorcycle manufacturer, and for which the durability test has been executed, the data (such as deterioration factors of the Certificate of Conformity) shall be submitted to the inspection organization to confirm the data. Then, the data may be adopted upon compliance with subparagraph 2 of Article 5, paragraph 2.2.2 of Appendix 1, and the related laws and regulations of Taiwan, and upon approval of the central competent authority.
- 3.4 Where the emission standards after January 1, 2017 (inclusive) are applicable, the test on HC emitted from the fuel tank and fuel supply system may identify 300 mg/test as its deterioration factor.
- 3.5 If the applicant is a motorcycle manufacturer or agent designated by the motorcycle manufacturer, the requirements for designated deterioration factors applied to an engine family generating an annual sales volume of less than 200 units, may be extended to that generating an annual sales volume of no more than 600 units. The applicant shall, per Appendix 3, increase the self-quality control random test ratio for that engine family. The central competent authority may strengthen the new vehicle random test and include the priority targets for recall, correction, investigation and test of in-use vehicles, with respect to the engine family.
- 3.6 Any individual who imports new motorcycles or in-use motorcycles separately under a personal name from overseas may adopt the deterioration factors referred to in paragraph 3.2 herein.

4. Evolution coefficient utilization regulations

Before conducting the new vehicle random test or quality control test, the vehicle configuration of each engine family may be assigned evolution coefficients that have been reviewed and approved by the central competent authority, with the requirement that the vehicle to be tested must be in a condition without run-in (accumulated mileage under 100 kilometers). The result value of the driving cycle test as executed, multiplied by the evolution coefficients, shall be considered as the test value after the vehicle reaches its expected stable condition and is in use. The evolution coefficients are set in the following manner:

- 4.1 Conduct vehicle on-road mileage accumulation test:
- 4.1.1 The Evolution Coefficient used in the exhaust emission test shall be set according to the result of the accumulated on-road mileage test. The applicant shall submit the Driving Cycle Test method and the plan required for the accumulated on-road mileage test. As a first step, the applicant shall submit the plan to the inspection organization for confirmation that the inspection-related data contained therein is correct. After being approved by the central competent authority, the applicant shall be allowed to conduct the Accumulated On-road Mileage Test.
 - 4.1.2 The contents of vehicle on road testing plan shall at minimum include the following items:
 - 4.1.2.1 Test laboratory name (includes proof of capability to perform the test)
 - 4.1.2.2 Test vehicle
 - 4.1.2.3 Test procedure
 - 4.1.2.4 Test schedule
 - 4.1.2.5 Test equipment
 - 4.1.2.6 Maintenance and repair items
 - 4.1.2.7 Test fuel
 - 4.1.3 The vehicle to be tested shall measure the emission values at zero mileage (mileage less than 100 kilometers) and at the required accumulation mileage (not over 1,500 kilometers) respectively.
 - 4.1.4 The evolution coefficient calculation method for each regulated pollutant: the pollutant's emission test value at required accumulation mileage divided by the emission test value at the zero mileage condition. The evolution coefficient may be less than 1.
 - 4.1.5 After completing the Accumulated On-road Mileage Plan, the applicant shall submit the plan to the inspection organization for confirmation that the inspection-related data contained therein is correct. Upon approval of the central competent authority, the applicant shall be allowed to use the evolution coefficients for conducting the Accumulated On-road Mileage Test.
- 4.2 Adopting the evolution coefficient defined in the conformity certificate issued by EU members or the UK: The applicant shall prepare the documents that will be used to obtain the evolution coefficient certification from EU members or the UK for such vehicle models. In the meantime, the applicant is also required to submit the inspection-related data to the inspection organization for confirmation as correct. After being approved by the central competent authority, the applicant shall then be allowed to use the evolution coefficient defined in the supporting document.

5. OBD requirements

- 5.1 Terms used in this Appendix are defined as follows:
 - 5.1.1 Malfunction: Deterioration or failure of the vehicle air pollution control equipment and related components resulting in pollution

emissions failing to meet the OBD control standards.

- 5.1.2 Malfunction simulation: Use of deteriorated or ineffective pollution prevention equipment and related components or electronic simulators to simulate the failure of the equipment or components in the test project.
- 5.1.3 Malfunction indicator: The light indicator used to inform a driver of any failure of related equipment or components detected by the OBD.
- 5.1.4 Continuous monitoring: Monitoring circuit continuity (e.g. lack of circuit continuity, circuit malfunction, and values exceeding normal operating values).
- 5.1.5 Driving Cycle: The vehicle driving process required for the OBD system to perform a comprehensive diagnostic assessment of the air pollution control equipment and related components. This includes engine start-up, operation, a period of driving, followed by engine shutdown, and sufficient idle time before the next engine starts. Any malfunctions occurring during this driving cycle should be diagnosed.
- 5.1.6 Warm-up cycle: A sufficient vehicle operation such that the coolant temperature may reach a minimum normal working temperature suggested by the manufacturer.
- 5.1.7 OBD family: The vehicle configurations produced by the same manufacturer with the same engine combustion cycle type, fuel supply method, fuel type, catalytic converter type, carbon particle trap type, secondary air system, exhaust recirculation system, and the same OBD monitoring functions and strategies, malfunction detection methods and malfunction indicators, may be defined as the same OBD family.
- 5.2 Motorcycles shall be equipped with adequate OBD per Article 6 of the emission standards, in order to monitor and identify the deterioration and malfunction of the pollution control equipment and related components, and the type thereof.
- 5.3 OBD controlled threshold limits are required as follows:

If deterioration or malfunction of vehicle pollution control equipment and related components results in the pollution emission exceeding the OBD emission threshold limit (no more than 20%), OBD shall display the malfunction of such pollution control equipment and related components.

The driving cycle test shall be conducted in accordance with the testing method and procedure for motorcycle exhaust emissions. The OBD controlled threshold limits are stated as follows:

 - 5.3.1 OBD Stage I and OBD Stage II-A
 - 5.3.1.1 Maximum speed under 130 km/hr:

The OBD controlled threshold limits are CO: 2170 mg/km, THC: 1400 mg/km and NOx: 350 mg/km.
 - 5.3.1.2 Maximum speed over 130 km/hr:

The OBD controlled threshold limits are CO: 2170 mg/km, THC: 630 mg/km and NOx: 450 mg/km.
 - 5.3.2 OBD Stage II-B

The OBD controlled threshold limits are CO: 1900 mg/km, NMHC: 250 mg/km, NOx: 300 mg/km, and PM: 50 mg/km (PM emission standards are only applicable to the vehicles with direct injection engines).

5.3.3 Applicable to the emission standards after January 1, 2017:

The OBD controlled threshold limits follow the OBD Stage I requirements.

5.3.4 Applicable to the emission standards after January 1, 2021:

The OBD controlled threshold limits follow the OBD Stage I or OBD Stage II-A or OBD Stage II-B requirements.

5.4 The OBD diagnosis scope and items shall comply with the following requirements:

5.4.1 Catalytic converter - The OBD system must be able to diagnose the catalytic converter deterioration or malfunctions before they cause THC (or NMHC) and NOx pollutant emissions to exceed the OBD controlled threshold limits (required in the case of the OBD Stage II-B).

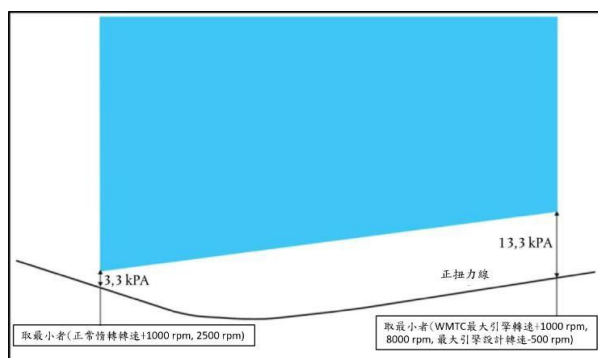
5.4.2 Engine misfire - The OBD system must be able to identify engine misfire malfunction status before the engine misfire causes any pollutant emissions to exceed the OBD controlled threshold limits, or causes damage to the catalytic converter (required in the case of the OBD Stage II-A or OBD Stage II-B).

The misfire shall be in the engine operating area surrounded by the following straight lines:

5.4.2.1 Low speed limit: 2500 rpm or normal idle speed + 1000 rpm, whichever is lower.

5.4.2.2 High-speed limit: 8000 rpm, maximum engine speed during the driving cycle test +1000 rpm, or maximum engine design speed -500 rpm, whichever is lower.

5.4.2.3 The straight lines connecting the following engine operating points: Lines connecting a point located at the low speed limit line defined in the preceding paragraph 5.4.1 and 3.3 kPa lower than the engine inlet vacuum, and a point located at the high speed limit line defined in the preceding paragraph 5.4.2 and 13.3 kPa lower than the engine inlet vacuum.



- 5.4.3 Oxygen Sensor - The OBD system must be able to identify the oxygen sensor malfunction status before the oxygen sensor's deterioration or malfunction causes any pollutant emissions to exceed the OBD controlled threshold limits (required in the case of the OBD Stage II-A or OBD Stage II-B).
- 5.4.4 The electronic evaporative emission purge control shall monitor and control the circuit continuity at least.
- 5.4.5 The OBD system must be able to identify the direct injection engine malfunction status before the direct injection engine's deterioration or malfunction causes PM emissions to exceed the OBD controlled threshold limits.
- 5.4.6 The OBD system must be able to identify the deterioration or malfunction status of any other online power components or systems related to emission control systems, components and pollution before the deterioration or malfunction of the same causes any pollutant emissions to exceed the OBD controlled threshold limits.
- 5.4.7 It is necessary to monitor the circuit malfunction status of the online power components (including related sensors with monitoring functions) related to emission pollution or functional safety. In particular, electronic component circuit continuity malfunctions, short circuits, power value range or performance, and emission control system signals should be monitored continuously.
- 5.4.8 When the limp-home operating mode is degraded after the online power components related to pollution emission or functional safety are triggered, the related malfunction codes shall be saved.
- 5.4.9 If the manufacturer can prove to the central competent authority that even when some specific component or system malfunction is removed, its pollution emission will not exceed the OBD controlled threshold limits, the specific component or system need not be monitored.
- 5.4.10 In order to help technicians repair vehicles effectively, the manufacturer may extend the OBD to monitor and report any other in-vehicle system. Notwithstanding, the extended diagnosis system is considered to be beyond the scope herein.
- 5.5 The OBD shall comply with the following requirements:
 - 5.5.1 The OBD shall be able to monitor and perform a periodical assessment of emission control equipment and related components. Whenever the engine is activated, the diagnosis and inspection are performed in order. The frequency shall be one OBD monitoring assessment to be completed for each driving cycle.
 - 5.5.2 The vehicle shall be equipped with a standardized OBD Malfunction Indicator Light (MIL) and malfunction code storage capability and allow reading of malfunction codes via a connector. When the vehicle is under inspection, diagnosis, maintenance or repair, the use of OBD

shall be unrestricted and standardized.

- 5.5.3 The OBD system shall perform a monitoring assessment on the pollution-related system or components, unless there is a likelihood of damage to the emission control equipment and related components, or there are any safety concerns, or the power take-off units are running.
- 5.5.4 If the OBD monitoring function is affected as a result of low oil level (less than 20%) or low voltage, the manufacturer may turn off the OBD temporarily.
- 5.5.5 If the manufacturer can provide relevant data or engineering assessment to prove to the central competent authority that the OBD monitoring function might not be reliable when the ambient temperature is below 266.2 K (-7°C) or the sea level exceeds 2500 meters or other ambient temperatures, the manufacturer may turn off the OBD temporarily.
- 5.5.6 If the manufacturer can prove to the competent authority that under specific engine speed and loading conditions, a lower percentage of misfire detection will make the OBD monitoring function unreliable, the manufacturer may require a higher percentage for the OBD misfire monitoring criteria.
- 5.5.7 If the manufacturer can prove to the competent authority that it is impossible to perform the OBD monitoring if there is a higher percentage of misfire, or it is impossible to distinguish the cause of misfire from any other causes (e.g. rough roads or gearbox shifting, etc.), the manufacturer may turn off the misfire monitoring system.
- 5.6 The requirements related to MI and fault code:
 - 5.6.1 The OBD shall be equipped with MIs that are easily visible to vehicle drivers. Except for displaying emergency start-up or limp-home procedures, an MI shall not be used for any other purposes, provided that it shall generate sufficient brightness and be identified easily. When an MI is on, it shall display a symbol in line with the symbol F.01 in ISO 2575:2010. Vehicles shall not be equipped with more than one general-purpose MI related to pollution emission problems or power failure that results in significant reduction in the torque. Individual special-purpose MIs are allowed (for example, braking system, seat belt or oil pressure, etc.). Red MIs are forbidden.
 - 5.6.2 With respect to situations where more than two preparatory driving cycles are required to trigger an MI, the manufacturer shall provide related data or engineering assessments to prove that the monitoring system may detect deterioration of components effectively in a timely manner. Notwithstanding, no more than ten preparatory driving cycles will be allowed. When the power control device enters the permanent default operating mode and the torque declines significantly or exceeds the OBD controlled threshold limits or the OBD cannot meet the basic monitoring requirements therefor, an MI shall go on.
 - 5.6.3 When an engine misfire causes damage to the catalyst, an MI shall

display a clear warning mode (e.g. a flashing light).

- 5.6.4 The MIs shall go on when the ignition switch is in the key-on position and before the engine starts running, and then they shall be off after detecting no malfunctions.
- 5.6.5 The OBD shall record the fault code indicating the status of the emission control system or the functional safety system that results in a significant decrease in torque. If an MI is on due to deterioration or malfunction of the system or a component, or is in permanent emission default operating mode, the fault code shall be saved to confirm the type of malfunction.
- 5.6.6 When an MI is on, the vehicle mileage may be verified through the serial port of the standard diagnostic connector. In the case of vehicles equipped with a mechanical milometer, the engine running time may be verified through the serial port of the standard diagnostic connector to replace the mileage.
- 5.6.7 If any clear single or multiple cylinder misfire fault codes are saved, it is not necessary to specify the cylinder expressly.
- 5.6.8 Upon three consecutive driving cycles, if the monitoring system ceases to detect malfunctions or cannot detect any other malfunction, the MI shall be off.
- 5.6.9 If the same malfunction is not re-recorded after at least forty engine warm-up cycles, the OBD shall clear the fault code, mileage and freeze-frame data.
- 5.6.10 When the Electronic Control Unit (ECU) is separated from the power supply or the battery is separated or malfunctions, the saved malfunction data shall not be cleared.
- 5.7 OBD diagnosis signals-related requirements:
 - 5.7.1 The OBD system shall save all detected fault code(s) with the MIL activated. The fault codes shall be capable of identifying the malfunctioning equipment, systems, or components. After individual fault codes are saved, they shall show the MIL activation status.
 - 5.7.2 Once the first-time malfunction of any component or system is verified, the engine freeze-frame data shall be saved into the ECU. The saved engine data (if any) include without limitation the calculated load value, engine speed, fuel trim value(s), fuel pressure, vehicle speed, coolant temperature, air flow rate, intake manifold pressure, open-loop or closed-loop operation, and correspondent fault codes.
 - 5.7.3 The manufacturer shall choose the most appropriate set of conditions facilitating effective repairs of vehicles for freeze-frame data to be saved. If the additional freeze-frame data may be read via the original manufacturer's diagnosis tool that meets the relevant requirements, the manufacturer may also save the same data.
 - 5.7.4 If a fuel system or misfire malfunction subsequently occurs, any freeze-frame data saved previously will be replaced by the fuel system or misfire conditions, whichever occurs earlier.

- 5.7.5 If available, the following signals in addition to the required freeze-frame data shall be made available through the standard diagnostic connector, including the diagnosis fault code, engine coolant temperature, fuel control system status (closed-loop, open-loop or others), fuel trim value(s), ignition timing advance, intake air temperature, manifold air pressure, air flow rate, engine speed, throttle position sensor output value, secondary air status (upstream, downstream or atmosphere), calculated load value, vehicle speed, anti-lock braking system switch position (on/off), activation of default mode and fuel pressure. The signals shall be expressed in the standard unit in accordance with the International Organization for Standardization (ISO) or standards of the Society of Automotive Engineers (SAE), and the actual signal shall be clearly distinguished from the default value or limp-home signal.
- 5.7.6 The software identification code and calibration verification code shall be accessed in a standard format through the serial port of the standard diagnostic connector.
- 5.7.7 In the case of any malfunction, if the evaluation of components conducted by the diagnostic system might cause some risk concerning functional safety or component malfunction, the evaluation of components may be exempted.
- 5.7.8 The OBD requirements and access to signals related to the main OBD control system and vehicle testing process shall be accessed through the serial port of the standard diagnostic connector, and a standardized and unrestricted OBD access method that complies with the following ISO standards and SAE requirements shall be made available to connect communication inside and outside the vehicle:
- 5.7.8.1 ISO 9141-2:1994/Amd 1:1996:Road Vehicles-Diagnostic Systems-Part 2:CARB requirements for interchange of digital information.
 - 5.7.8.2 SAE J1850: March 1998 Class B Data Communication Network Interface. Emission related messages shall use the cyclic redundancy check and the three-byte header and not use inter byte separation or checksums.
 - 5.7.8.3 ISO 14229-3:2012:Road vehicles-Unified diagnostic services (UDS)-Part 3:Unified diagnostic services on CAN implementation.
 - 5.7.8.4 ISO 14229-4:2012:Road vehicles-Unified diagnostic services (UDS)-Part 4:Unified diagnostic services on FlexRay implementation.
 - 5.7.8.5 ISO 14230-4:2000:Road Vehicles-Key word protocol 2000 for diagnostic systems-Part 4:Requirements for emission-related systems.
 - 5.7.8.6 ISO 15765-4:2011:Road vehicles -Diagnostics on Controller Area Network (CAN)-Part 4: 'Requirements for emission-

related systems', dated 1 November 2001.

- 5.7.8.7 ISO 22901-2:2011:Road vehicles-Open diagnostic data exchange (ODX)-Part 2:Emissions-related diagnostic data.
- 5.7.8.8 ISO 15031-4:2005:Road vehicles-Communication between vehicle and external test equipment for emissions-related diagnostics-Part 4:External test equipment.
- 5.7.8.9 ISO 15031-5:2011 Road vehicles-Communication between vehicle and external test equipment for emissions-related diagnostics-Part 5:Emissions-related diagnostic services.
- 5.7.8.10 ISO 15031-6:2010 Road vehicles-Communication between vehicle and external test equipment for emissions-related diagnostics-Part 6: Diagnostic trouble code definitions relating to emission-related system diagnostic trouble codes.
- 5.7.8.11 ISO DIS 15031-3:2004 Road vehicles-Communication between vehicle and external test equipment for emissions-related diagnostics-Part 3: Diagnostic connector and related electric circuits: specification and use.
- 5.7.8.12 ISO 19689:2016'Motorcycles and mopeds-Communication between vehicle and external equipment for diagnostics-Diagnostic connector and related electrical circuits, specification and use'.
- 5.7.9 The diagnostic connector referred to in the preceding paragraph shall be placed under the vehicle seat; otherwise, approval shall be sought from the central competent authority. For vehicles with OBD Stage I, upon request of the vehicle manufacturer, the central competent authority may agree with the vehicle manufacturer to use an alternative connection interface. The vehicle manufacturer shall provide the same connector to all users to help connect the original manufacturer's scanning tool.
- 5.7.10 The vehicle manufacturer shall make the OBD-related information available fairly to all manufacturers of components, diagnostic tools and test equipment.
- 5.7.11 The vehicle manufacturer shall post the information about diagnostic tool functions, maintenance information, and links to troubleshooting instructions on the maintenance information website in order to provide the maintenance personnel of different brands with access to the original manufacturer's tools.
- 5.7.12 The vehicle manufacturer shall provide complete documentation stating the strategies for sensing component malfunction detection and activation of ML (fixed number of driving cycles or statistical methods), including 2nd sensing parameters related to various components monitored by the OBD, individual pollution-related and non-pollution-related power component OBD output codes and formats (including instructions). For example:

| Components | Diagnostic fault codes | Monitored strategies | Malfunction detection standards | ML activation criteria | Auxiliary parameters | Preparatory driving | Demonstration test | Default mode |
|------------|------------------------|-----------------------------------|--|------------------------|---|---------------------|--------------------|--------------|
| Catalyst | P0420 | 1st and 2nd oxygen sensor signals | Difference between 1st and 2nd oxygen sensor signals | 3rd cycle | Engine speed, engine load A/F mode catalyst temperature | Two WMTC cycles | WMTC | None |

5.8 OBD test-related requirements:

- 5.8.1 The applicant shall select the vehicle test results representing the highest expected pollution emissions of the OBD family as the test results for all vehicle configurations within the same OBD family.
- 5.8.2 The OBD test shall be performed on a test vehicle that has completed durability testing or the equivalent OBD testing. In the case of a new vehicle, deterioration factors may be applied to the new vehicle OBD test results to derive final OBD test results.
- 5.8.3 The OBD system shall be used to monitor all exhaust emissions-related control equipment & related components or systems. The applicant shall conduct the OBD monitoring tests on no more than four items during the new vehicle configuration inspection stage, and provide components or systems with appropriate deterioration level or fault simulators to the test laboratory to perform the OBD tests. Before performing the OBD tests, the applicant shall verify that the test vehicle conforms to the Emission Standards. The central competent authority may assign specific items for which the applicant is to perform tests.
- 5.8.4 If the requirements referred to in the preceding subparagraph meet any of the following conditions, the OBD tester may perform at least one OBD disconnection measurement in accordance with OBD requirements under the testing method and procedure for motorcycle exhaust emissions:
 - 5.8.4.1 The sales volume per OBD family is less than 200 units.
 - 5.8.4.2 The application filed by the applicant is not based on the engine family as the basic unit.
- 5.8.5 The applicant shall perform the OBD test at the test laboratory approved by the central competent authority in accordance with the testing method and procedure for motorcycle exhaust emissions, or submit an OBD testing plan voluntarily in accordance with the relevant requirements herein. The OBD testing plan shall be submitted to the inspection organization for confirmation. Then, the OBD test may be conducted only upon approval of the central competent authority. The OBD test plan shall include the following items, at minimum:
 - 5.8.5.1 Name of the OBD family.
 - 5.8.5.2 Conducting unit and location (including test capability certification).

- 5.8.5.3 Test procedure (including basis, items, contents, fault simulation principles, and fault simulation operational instructions, etc.).
 - 5.8.5.4 Test schedule
 - 5.8.5.5 Test vehicle
 - 5.8.5.6 Test equipment
 - 5.8.5.7 Other supplementary documentation
- 5.9 For engine family vehicles that are unable to comply with all OBD regulations, the application for the Certificate of Conformity of the vehicles shall be handled in the following manner:
 - 5.9.1 The applicant, after considering the feasibility of technology, the timing of vehicle phase-in and phase-out schedule for the production, or any relevant special circumstances such as computer program upgrades, which may lead to the unreliability of the On-Board Diagnostics (OBD) monitoring function, may submit an application stating that the on-board diagnostic system (OBD) temporarily fails to fully comply with the regulations. Upon approval of the central competent authority, the applicant's OBD may be exempted from compliance with OBD-related requirements temporarily.
 - 5.9.2 For the primary OBD monitoring items, such as catalytic converter, oxygen sensor and engine misfiring, monitoring is required.
 - 5.9.3 If the engine family OBD requested by the applicant cannot fully meet the requirements for the time being, the applicant shall complete the OBD corrective action in the next year of the engine family to make it meet the OBD requirements. If the factors, such as the modification or additional phase-in of the OBD software/hardware, cause it to be impossible to complete the correction in that year, the relevant information shall be attached in order to facilitate the application for the renewal of the approval for the temporary non-compliance with the requirements in the next year. The renewal in the next year may be applicable upon review and approval by the central competent authority. Notwithstanding, the renewal so requested shall be allowed for no more than 3 years.
- 5.10 OBD requirements for in-use vehicles:
 - 5.10.1 For an OBD family generating an annual sales volume of more than 1,000 units and with OBD Stage II-A or OBD Stage II-B, the in-use vehicles shall be able to monitor and store the in-use performance ratio of the OBD. The relevant regulations thereof shall be based on the "in-use performance" requirements referred to in Annex 12 of the Regulation (EU) No. 44/2014. When applying for a new engine family Certificate of Conformity, the applicant shall present the monitoring items, statement of monitoring conditions, and descriptions of the functions such as OBD In-Use Performance Ratio (IUPR). For the OBD Stage II-B family, the OBD in-use performance ratio of each major monitoring component or system of the in-use vehicle shall

meet the following requirements.

5.10.1.1 In-user performance ratio average ≥ 0.1 .

5.10.1.2 In-use performance ratio of more than 50% of the vehicles ≥ 0.1 .

5.10.2 Said main monitoring components or systems refer to the following vehicle equipment:

5.10.2.1 Catalyst

5.10.2.2 Oxygen/exhaust gas sensors, including 2nd oxygen sensor (each to be reported separately).

5.10.2.3 Evaporative system

5.10.2.4 EGR system

5.10.2.5 VVT system

5.10.2.6 Air injection system

5.10.2.7 Smoke filter

5.10.2.8 NO_x treatment systems (e.g. NO_x adsorbents, NO_x reagents/catalytic systems)

5.10.2.9 Boost control system.

Appendix 2: Documents Required and Compliance Matters for Certificate of Conformity Application

1. When applying for the Certificate of Conformity, the following documents shall be provided:
 - 1.1 The format and related documents specified by the online transmission application system designated by the central competent authority include:
 - 1.1.1 Application form.
 - 1.1.2 Draft “Motorcycle configuration emissions Certificate of Conformity.”
 - 1.1.3 The format specified by the system
 - 1.1.3.1 General information about applicant and the engine family.
 - 1.1.3.2 All configurations and estimated annual sales volume for the engine family.
 - 1.1.3.3 Specifications for all vehicle models and engine family. Motorcycles with idle-stop function and hybrid motors or electrical motors shall be specified in the name of vehicle configuration.
 - 1.1.3.4 Basic engine information, including combustion cycle, cylinder structure, number of cylinders, displacement, cooling method, air supply method and fuel supply method, etc.
 - 1.1.3.5 Transmission and gearshift system information.
 - 1.1.3.6 Emission control system descriptions and schematic diagrams.
 - 1.1.3.7 Location of emission control system in vehicle, and a list of all emissions control components with part number for each component.
 - 1.1.3.8 Adjustable parameters and suggested setting values related to pollution emissions
 - 1.1.3.9 Guideline for the owner’s manual and emissions label to be affixed to motorcycles.
 - 1.1.3.10 The individual deterioration factors/evolution coefficient for emitted air pollutants.
 - 1.1.3.11 New vehicle configuration test report and durability test approval data.
 - 1.1.3.12 When applying for vehicle modification for the Certificate, a list of amended items including each time, date of each amendment, and a summary of amendment contents must be reported.
 - 1.1.3.13 Photograph of the test vehicle.
 - 1.1.4 The authorization document provided by the foreign vehicle manufacturer to the designated domestic dealer. The authorization documents shall endow the domestic dealer with full authority to represent the vehicle manufacturer, and bear the same responsibilities. The power of attorney shall state the vehicle configurations covered by the engine family, and provide the test certification data and corresponding vehicle configuration codes in the EU or UK Certificate of Conformity subject to the relevant testing items.
 - 1.1.5 A letter of guarantee to ensure the vehicle model complies with the

related emissions standards and durability requirements and with no defeat devices being installed. However, this prohibition does not apply to emission control devices falling under one of the following circumstances:

- 1.1.5.1 Those equipped with essential functions necessary to protect against damage and prevent accidents.
- 1.1.5.2 Mechanisms that prevent the device from operating after the engine has been started and the automobile has been warmed up.
- 1.1.5.3 Its operating condition has been included in the regulatory testing process and it has been verified to be qualified upon test.
- 1.1.6 The relevant requirements on the quality control (Conformity of Production) plan for motorcycle emission air pollutants shall follow Appendix 3.
- 1.1.7 The OBD-related documentation shall be handled in accordance with Appendix 1, including:
 - 1.1.7.1 Name of the OBD family.
 - 1.1.7.2 Descriptions of the OBD system.
 - 1.1.7.3 Descriptions or drawings of the MI used in the OBD.
 - 1.1.7.4 Description of all air pollutant control equipment and related components/systems monitored by the OBD, as well as a list of fault codes, related computer code format, and contents.
 - 1.1.7.5 Descriptions or flowcharts of the actuating principles for the OBD monitoring components (including monitoring strategy, ML standards and timing for activation of MIL, etc.)
 - 1.1.7.6 OBD test reports.
 - 1.1.7.7 An explanation of adopted solutions or strategies to prevent arbitrary adjustment or modification of the Engine Control Units (ECU).
 - 1.1.7.8 Descriptions about the location of the OBD connector (DLC).
 - 1.1.7.9 Other documentation designated by the central competent authority.
- 1.1.8 For vehicles with the EU or UK issued Certificate of Conformity that are in compliance with Taiwan's emission standards and relevant regulations, the following documents shall be submitted to the central competent authority for application purposes:
 - 1.1.8.1 Photocopies of the EU or UK issued Certificate of Conformity and other relevant application documents.
 - 1.1.8.2 An emission pollution test report consistent with the issued Certificate of Conformity.
 - 1.1.8.3 The deterioration factors and evolution coefficients together with complete supporting information for the vehicle.
 - 1.1.8.4 A declaration confirming that the requested vehicle is identical to the original configuration overseas and that the software and hardware specifications are identical to the contents recorded in the Certificate of Conformity issued by the EU or the United

Kingdom, with identical emission characteristics.

- 1.1.9 For motorcycles with non-pure internal combustion engines (e.g. hybrid motorcycles), the following relevant documents shall be provided separately, including:
 - 1.1.9.1 Verification and description of the vehicle type.
 - 1.1.9.2 Operation mode switching and function description.
 - 1.1.9.3 Energy storage device description and warranty mileage.
 - 1.1.9.4 Electrical power and mechanical systems.
 - 1.1.9.5 Control unit.
 - 1.1.9.6 Power control unit.
 - 1.1.9.7 Pure electrical maximum driving mileage.
 - 1.1.9.8 Suggested items from vehicle manufacturer.
- 1.1.10 The electronic control unit shall specify the software name, version, identification method, and software identification picture displayed by the diagnostic device.
- 1.1.11 For motorcycles with manual idle-stop devices, it is necessary to present the supporting test report showing compliance with the emission standards when the device is off. For hybrid electric motorcycles with manual switches, in the case of pure internal combustion engine operating models, it is necessary to present the supporting rest report showing compliance with emission standards under the pure internal combustion engine operating model.
- 1.2 The owner's manual and emissions label affixed to a motorcycle shall comply with the following requirements:
 - 1.2.1 Owner's manual:
 - 1.2.1.1 The applicant shall provide the owner a Mandarin user's manual as a maintenance guide for the vehicle's normal operation, thereby ensuring the emission control system can function normally, and clarify the expiration date of the warranty for the emission control system. The owner's manual shall include the following information:
 - (1) Vehicle specifications.
 - (2) Operational method.
 - (3) Type and octane number of fuel used by the vehicle.
 - (4) Warranted scope, time/mileage.
 - (5) Maintenance and repair scope, time/mileage.
 - (6) Address and telephone number of the vehicle service center.
 - (7) The vehicle owner shall be advised to work with the competent authority in any necessary investigation and test.
 - 1.2.1.2 In the owner's manual, the maintenance guide for the emission pollution and emission control related components shall be described in detail.
 - 1.2.2 Label:

- 1.2.2.1 The applicant shall produce at least one long-lasting and easily identifiable label and affix it to the vehicle in a clearly visible place.
- 1.2.2.2 The label shall not be easy to remove from the vehicle. If torn off, the label will be damaged or cause printed text to be unrecognizable.
- 1.2.2.3 The applicant who has obtained the Certificate of Conformity shall affix the label onto the vehicle before sale. The contents shall include the following information in Mandarin:
 - (1) The title of the label shall be "Vehicle Emissions Control Information".
 - (2) Full title of the company, vehicle manufacturer and brand.
 - (3) The engine family, engine displacement, OBD (OBD Stage I, OBD Stage II-A or OBD Stage II-B requirements).
 - (4) The optimal engine adjustment specifications shall include idle speed and parameters considered necessary by the vehicle manufacturer.
 - (5) Identification number of the pollution control equipment (please refer to Article 2 of the Regulations Governing Mobile Source Air Pollution Control Equipment).
 - (6) It is necessary to note that the engine family complies with the emission standards implemented on MM/DD/YY (subject to the date of implementation of the emission standards applicable to the engine family), and the user or owner shall not remove or re-model the air pollution control equipment that has not been certified by the central competent authority.
- 1.3 For the application for Certificate of Conformity filed by the agent designated by the imported motorcycle manufacturer, if the name of the imported vehicle configuration is different from the name stated in the overseas certification information, the following documents shall be submitted to the central competent authority separately:
 - 1.3.1 Proof showing the origin of the vehicle that is provided by the imported motorcycle manufacturer or by the agent designated by the manufacturer.
 - 1.3.2 Provide related information and descriptions for the said vehicle model's engine family and emissions control system.
- 1.4 Records of the territory where it is manufactured or imported: For an engine family or vehicle configuration that has already obtained a Certificate of Conformity issued by EU members or the United Kingdom, the country where it is manufactured shall be recorded with the country where the manufacturer is situated, as shown in the Certificate of Conformity; for an engine family or vehicle configurations without a Certificate of Conformity issued by EU members or the United Kingdom, but using domestic testing reports for the application, the registration of import area shall be completed as the country where the shipping port referred to in the import tax payment

certificate issued by the customs is located.

2. The configuration name stated in the Certificate of Conformity shall include the sales name. The configuration name and sales name of the imported vehicle shall be identical to those recorded overseas. If the same configuration is manufactured and imported in the same territory, the applicant can only apply for one Certificate of Conformity. If the applicant is not a domestic vehicle manufacturer, nor a local agent authorized by the foreign vehicle manufacturer, the application documents shall be completed based on the owner's manual, technical manual, or product catalog of the original manufacturer circulating on the international market, and the original owner's manual or product catalog shall be attached for the application. If said manual or catalog cannot be obtained, the attachment shall be remarked as N/A. However, the application for an engine family is limited to the same vehicle model.

Appendix 3: Quality Control Requirements for Motorcycle Mass Production

1. Applicants for engine family emissions certification for mass produced vehicles shall implement mass production vehicle quality control measures pursuant to the Appendix to ensure that the emissions of vehicles satisfy emission standards during the emissions control system's useful life warranty period. The motorcycle emission air pollutant quality control plan shall be implemented in accordance with the following specified items and requirements:
 - 1.1 Self-conducted selective testing method.
 - 1.2 Selective sampling ratio.
 - 1.3 Testing items.
 - 1.4 Organization name that conducts the test.
 - 1.5 Instruments and equipment.
 - 1.6 Test results and a complete record of the testing.
 - 1.7 Deployment data for personnel implementing the Conformity of Production plan and the personnel information who will cooperate with the new vehicle random inspection and the recall and correction investigation testing.
 - 1.8 Plan implementation flowchart.
 - 1.9 Improvement plans for problems or issues.
 - 1.10 Other supplementary notes and information about after-sale service centers for the mass production vehicles (e.g. maintenance, service and repair centers (stations)).
2. Commissioned test regulations
 - 2.1 The quality control test shall be performed by a test laboratory approved by the central competent authority.
 - 2.2 If a quality control test is performed, the quality control test results of the test laboratory shall be submitted to the online transmission application system designated by the central competent authority.
3. New vehicle quality control measures
 - 3.1 Tested items

This includes the driving cycle test, idle status test, and OBD disconnection test.
 - 3.2 New vehicle Conformity of Production testing sampling ratio
 - 3.2.1. For those implementing the quality control test independently, based on the sampling ratio, each engine family shall select at least one vehicle per 500 manufactured or imported vehicles for a random test. If it is impossible to implement the quality control test independently, the test laboratory approved by the central competent authority shall be contracted to execute an emission test. Based on the sampling ratio, for each engine family, at least one vehicle per 200 manufactured or imported vehicles shall be selected for a random test.
 - 3.2.2. For an engine family that uses designated deterioration factors and is only applicable in the case of an annual sales volume of 600 units, based on the sampling ratio of those who can implement the quality control test independently, for each engine family, at least one vehicle per 250 manufactured or imported vehicles shall be selected for a random test. If it is impossible to implement a quality control test independently, a

test laboratory approved by the central competent authority shall be contracted to execute the emission test. Based on its sampling ratio, for each engine family, at least one vehicle per 100 manufactured or imported vehicles shall be selected for a random test.

3.2.3. Vehicles used for the voluntary quality control test shall be those that have never been tested before. Repeated tests are not allowed.

3.2.4. If each engine family fails the quantity specified in the preceding subparagraph before ceasing to manufacture or import vehicles, at least one vehicle shall be selected for a random test. If all vehicles have already been tested before they cease to manufacture or import vehicles, related documentation shall be submitted to facilitate the application with the central competent authority for exemption from the test.

3.3 The applicant shall complete the quality control test before the sales volume reaches the controlled threshold limits that are defined in paragraph 3.2: Random Test Ratio, and present the test report within the prescribed time limit.

4. In-use vehicle quality control measures

4.1 Tested items:

4.1.1. Maintenance and Warranty information.

The applicant shall compile relevant service information for the record, in case of customer complaints concerning warranty or repairs and OBD fault codes of the emission control system that occur during the effective term and warranty period of the emission control system of the vehicle each year, and maintain the record for five years. The OBD fault code statistical data shall include the OBD family, engine family, vehicle configuration, engine number or body number, fault code, mileage at the time of freeze fault codes, and frequency of occurrence of individual fault codes, etc.

4.1.2. OBD In-Use Performance Ratio

For the OBD family generating an annual sales volume of more than 1,000 units and equipped with the OBD Stage II-A or OBD Stage II-B, the applicant shall review the OBD in-use performance of the vehicles sold domestically and prepare the record and statistical report, which shall be maintained for five years, in accordance with Appendix 1 paragraph 5.10 “OBD In-Use Performance Ratio.”

4.2 Sampling ratio:

4.2.1. OBD In-Use Performance Ratio

4.2.1.1. For the OBD family of OBD Stage II-A or OBD Stage II-B, when the vehicles are in use, the applicant shall select 6 vehicles if the family generates an annual sales volume ranging from 1,000 units to 5,000 units; 15 vehicles if the family generates an annual sales volume ranging from 5,000 units to 10,000 units; 30 vehicles if the family generates an annual sales volume ranging from 100,000 units to 200,000 units; and 45 vehicles if the family generates an annual sales volume more than 200,000 units, for investigation, statistics and analysis of the OBD in-use

performance ratio and for compliance with the requirements referred to in Appendix 1 paragraph 5.10.

4.2.1.2. For said selection of vehicles when they are in use, the vehicle configuration enjoying a larger sales volume or which serves as the representational configuration shall be considered the first priority. The tested vehicle shall run for 30,000 km (inclusive) or over 6 months (inclusive), whichever is later. In the meantime, the mileage or the service duration shall be guaranteed in terms of the emission control system.

4.3 The applicant shall complete a quality control test before the sales volume reaches the controlled threshold limits that are defined in paragraph 4.2: Random Test Ratio, and present the test report within the prescribed time limit.

5. Test result and data reporting schedule

5.1 The applicant shall report and log in the test results and related data in the format established for the online transmission system designated by the central competent authority and then submit the same to the central competent authority for future reference.

5.2 New vehicle quality control: Before the 20th of each month, the applicant shall report the production quantity of new vehicles, imported quantity and new vehicle quality control test results of the previous month.

5.3 In-use vehicle quality control: Before the 31st of March each year, the applicant shall report the warranty record and OBD in-use performance record for the previous year.

5.4 Upon completion of the quality control test, the applicant shall not attempt to change the test objectives of the vehicles failing the test.

Appendix 4: Random Tests for New Motorcycles and Provisions for Recall and Correction Testing for In-Service Motorcycles

1. The central competent authority may require the new vehicle random testing for vehicles which have obtained the Certificate of Conformity, in order to check whether mass produced vehicles comply with emission standards and related laws and regulations.
2. The central competent authority shall provide detailed explanations of the time and tested items of new vehicle random tests. An applicant who has received a Certificate of Conformity shall respond to the new vehicle's random test operations immediately upon receipt of notice from the central competent authority. If the applicant fails to respond within 5 days upon receipt of the notice from the central competent authority, the central competent authority shall suspend the verification of the stamp for the family engine or vehicle configuration that is subject to the random test.
3. Vehicle Selection:
 - 3.1 The engine family vehicle configuration subject to random testing shall be designated by the central competent authority. The vehicles shall be selected at random from the engine family and shall represent those that are being sold or already sold on the market.
 - 3.2 The applicant shall make available for selection by the central competent authority the specified number of mass produced vehicles that have never been previously tested. The quantity thereof shall be at least three times that for the random test.
 - 3.3 Locations for selection of sample test vehicles:
 - 3.3.1 Storage areas for the vehicles that have completed the conformity of production test.
 - 3.3.2 An applicant's designated domestic agent, distributor or dealer's vehicle storage locations.
 - 3.3.3 Storage Warehouse of Republic of China Customs.
 - 3.4 Sampling ratio and testing types:
 - 3.4.1 Driving cycle testing and idle testing: for the same engine family, 10 vehicles shall be selected for the random test if the annual sales volume exceeds 50,000 units; 5 vehicles if the annual sales volume ranges from 10,000 units to 50,000 units; 1 vehicle per additional 2,000 units if the annual sales volume is less than 10,000 units; and 1 vehicle if the annual sales volume is less than 2,000 units.
 - 3.4.2 For the HC test for evaporative gases in fuel tanks and fuel supply systems, one vehicle may be selected for the random test for each engine family.
 - 3.4.3 For the OBD test, one vehicle may be selected for the random test for each OBD family.
 - 3.4.4 If the central competent authority considers that there is a likelihood of non-compliance with the emission standards, it may increase the quantity of new vehicles subject to the random test for that engine family.

4. Test schedule and location:

Upon selection of test vehicles, the applicant shall have the test vehicles in place within four weeks. Notwithstanding, the applicant may request for extra days for the OBD test if deemed necessary, and send the vehicles to the test laboratory designated by the central competent authority according to the designated schedule. The testing shall be conducted subject to the tested items required by the emission standards. The test and freight fees shall be borne solely by the applicant. If approved by the central competent authority, the OBD test may be conducted by the self-established laboratory designated by the applicant. Unless the central competent authority designates the schedule, the following submission schedule shall apply:

- 4.1 1-5 vehicles: 15 working days
- 4.2 6-15 vehicles: 20 working days
- 4.3 16-25 vehicles: 24 working days
- 4.4 More than 26 vehicles: 36 working days

5. Vehicle Preparation

- 5.1 If necessary, the applicant may run-in the test vehicles to the required minimum mileage within the test period, to ensure stable emission test results for the test. Notwithstanding, the mileage shall be no more than 1,500 kilometers.
- 5.2 The fuel used for the accumulation of mileage shall be the test fuel (gas) required by the central competent authority or purchased from domestic gas stations.
- 5.3 During the run-in period, motorcycles subject to random testing shall not be adjusted, maintained or inspected voluntarily. Notwithstanding, upon prior approval by the central competent authority, the applicant may use instruments, equipment, or tools with the same functionalities as the service stations owned by distributors to perform the maintenance, inspection, or adjustments insofar as they are done under the supervision of personnel designated by the central competent authority.
- 5.4 In the case of objections or inability to perform the testing due to a vehicle accident, the applicant should provide the central competent authority with an explanation prior to the test. The central competent authority may authorize adjustments or repairs to restore the vehicle back to normal operating condition and make it suitable for testing. The central competent authority may disqualify that vehicle if the seal is broken or it deems the motorcycle subject to the random test is no longer representative for the test, and select other vehicles as a replacement. The number of replacement vehicles is determined by the central competent authority, subject to the sampling ratio. The applicant shall not raise any objection against the test vehicles and test values.

6. Determination and handling of test results

- 6.1 If the test results of all vehicles subject to the random check comply with the related emission standards, they shall be deemed as having passed the new vehicle random test successfully.

- 6.2 If any of the selected vehicles fail the random test, then the applicant may ask to conduct the retest once or may also ask the central competent authority to conclude that the vehicle has failed the initial test. The re-test shall be completed within the time limit instructed by the central competent authority upon the applicant's receipt of the notice. If failing to do so, the original test result shall be regarded as the final result in the preliminary test.
- 6.2.1 The re-test may be requested only before the test vehicle is removed from the test laboratory.
- 6.2.2 Any repairs, adjustments or tests to the vehicle are prohibited during the re-test.
- 6.2.3 The re-test results in the preliminary test shall be treated as the final result of the preliminary test. It will be judged as qualified if it complies entirely with the emission standards.
- 6.3 When a preliminary test is determined as non-compliant, within 15 days from the day of receipt of notice from the central competent authority, the applicant may accept the determination of non-compliance, or submit a written request for repeat testing and act in accordance with the provisions to propose a Recall and Correction plan to the central competent authority.
- 6.3.1 The number of samples taken for the re-test shall be decided by the applicant personally, provided that it shall be no less than double that of the unqualified ones found in the preliminary test.
- 6.3.2 The selection, run-in and test of the re-test vehicles remain the same as those applicable to the preliminary test vehicles.
- 6.3.3 Before the vehicle failing the re-test leaves the test laboratory, the applicant may ask again for one re-test. The re-test shall be completed within the time limit instructed by the central competent authority upon the applicant's receipt of the notice. If failing to do so, the original test result shall be regarded as the final result for the re-test. The re-test result shall be regarded as the final result of the re-test. In the meantime, the applicant shall not attempt to make any repairs, adjustment or other testing during the re-test.
- 6.4 If the arithmetic average of individual air pollutants of vehicles that fail the preliminary test and all vehicles undergoing the random re-test is lower than the emission standards, they will be deemed as having passed the new vehicle random test; otherwise, they shall be deemed as having failed the new vehicle random test.
- If the test referred to in the preceding paragraph means the OBD test, and the sum of the vehicles failing the preliminary test and those failing the random test during the re-test divided by the sum of the vehicles failing the preliminary test and all of the vehicles undergoing the random test during the re-test is less than 0.4, and the sum of the vehicles failing the preliminary test and those failing the random test during the re-test is less than 4, they will be deemed as having passed the new vehicle random test; otherwise, they shall be deemed as having failed the new vehicle random

test. The determination may be made in the following manner:

| Determination | Criterion |
|---------------|--|
| Formula 1 | $(N_{fn} + N_{sn}) / (N_{fn} + N_s) < 0.4$ |
| Formula 2 | $(N_{fn} + N_{sn}) < 4$ |
| Remarks | <ol style="list-style-type: none">1. N_{fn}: Number of vehicles failing the preliminary test2. N_{sn}: Number of vehicles that failed the re-test3. N_s: Number of vehicles undergoing the random test during the re-test |

- 6.5 Although they are deemed as having passed the new vehicle random test, for vehicles failing the preliminary test or re-test, the applicant still needs to provide the cause of failure and corrective action, attached with a test report showing that each vehicle meets the emission standards after the correction, which shall be submitted to the central competent authority for future reference.
- 6.6 For vehicles failing the new vehicle random test for which the Certificate of Conformity has been revoked or abandoned by the central competent authority, within 30 days upon receipt of the notification, the applicant shall submit a recall and correction plan for the unsold and already sold engine family vehicles. Upon review and approval by the central competent authority, the recall and correction plan shall be completed within 90 days upon receipt of the approval letter. If it is impossible to complete the plan by the deadline, within 30 days upon receipt of the approval letter, the applicant shall submit a specific improvement plan to apply for an extension with the central competent authority. Subject to the actual conditions, the central competent authority may approve the extension, which shall be no longer than one year. The central competent authority may immediately terminate the improvement deadline immediately if the improvement plan is proven to be not implemented precisely upon investigation.
- 6.7 The contents of the Recall and Correction plan include:
- 6.7.1 Engineering analysis of causes of non-compliance with the emission standards for each vehicle that does not meet the emission standards.
 - 6.7.2 An influence assessment for the cause of non-compliance.
 - 6.7.3 The brand, engine family, vehicle configuration and quantity of recalled and corrected vehicles, and vehicles to be recalled and corrected.
 - 6.7.4 The projected ratio between the quantity of recalled vehicles to that of sold vehicles.
 - 6.7.5 The corrective actions to be implemented for vehicles recalled for correction, such as component replacement, repair, inspection, calibration, adjustment or other summary of technical information for any other required changes, are sufficient to document improvements to air pollutant emissions and compliance with the standards herein.

- 6.7.6 The way to access the list of names and addresses of the recalled vehicle owners.
- 6.7.7 For vehicles to be recalled and corrected, without the consent of the central competent authority, the vehicle owner shall not be forced to respond to any requirements or conditions about the maintenance or conditions, e.g. requiring the vehicle owner to use spare parts other than those provided by the original manufacturer for his/her vehicle or have his/her vehicle maintained and repaired by any repair and service center without authorization from the vehicle manufacturer or importer.
- 6.7.8 The recall and correction process shall consist of the appointment of vehicle owners and start and finish dates for the recall and correction, the location where the work is performed, and the reasonable time limit required for the performance of the work.
- 6.7.9 The proof of technical capability and facilities for the organization and technicians responsible for the implementation of the recall and correction plan.
- 6.7.10 Send notices to the owners of recalled and corrected vehicles.
- 6.7.11 Provide replacement components and an appropriate supply system during recall and correction period.
- 6.7.12 The necessary guidance for the technicians involved in the recall and repair plan.
- 6.7.13 The impact that might be posed to the fuel consumption, noise, or other performance functionalities of the recalled and corrected vehicle, if any, shall be clarified.
- 6.7.14 The applicant may provide other technical data and test reports to prove the effectiveness of the recall and correction plan to the competent authority for evaluation.
- 6.8 The central competent authority shall perform verification tests for each remedy measure of the recall and correction plan implemented by the applicant.
- 6.9 Within 15 days after complete implementation of the recall and correction plan, the applicant shall submit a recall and correction implementation report to the central competent authority for review.
- 6.10 When the central competent authority notifies the applicant of the cancellation or revocation of the Certificate of Conformity, the Ministry of Transportation and Communications should also be notified simultaneously.
- 6.11 For unsold vehicles with a revoked Certificate of Conformity, once the applicant has completed the implementation of the recall and correction plan, after it is reviewed and approved by the central competent authority, the applicant may re-apply for the Certificate of Conformity for the engine family, in accordance with these provisions.