HONDA
The Power of Dreams

Honda Comments – CARB ONMC Rulemaking

Regulation Language & Test Procedures

Honda Motor Co., Ltd.
American Honda Motor Co., Inc.
October 28, 2024

ATTACHMENT C-1　TP-934

No.	Draft Legislation	Comment
4 DURABILITY TESTING 10.2 Appendix B – Carbon Performance Requirements	Evaporative emissions control systems that utilize carbon canisters shall meet the requirements of Appendix B before durability testing of Section 4 or service accumulation. The carbon performance procedure of Section 10.2.1 must be conducted prior to the carbon canister durability procedures of Section 4.1. A manufacturer may use the carbon performance data provided by the canister vendor; if the vendor certifies that the carbon has met the carbon performance criteria according to Section 10.2.1. 10.2.1 A maximum loss of 12% or less of butane working capacity is required following 150 load/purge cycles as well as preconditioning and purge with warm 77°F± 4°F (25°C± 2°C) dry air. A common cycle is measuring the change in butane working capacity following the procedure in Section 5.2.1 performing the load/purge using 150 cycles of load with a mixture of 50 percent gasoline (or butane) vapor/air loaded at 40 grams/hr, and purged each time with a minimum of 300 bed volumes of dry air per flow rates specified in Section 5.2.1. The canister butane working capacity must be recalculated according to Section 5.2.1. The initial BWC should be established before fuel exposure of between 10 and 100 BWC cycles and the final BWC should be established after 150 cycles of fuel exposure by performing not more than 10 BWC cycles.	<Confirm> Honda understands that if the canister vendor can demonstrate performance in accordance with TP934 10.2 Appendix B, the manufacturer is not required to perform durability testing on the canister (Section 10.2.1) before performing evaporative emissions testing. Honda would like to clarify if our understanding is correct.

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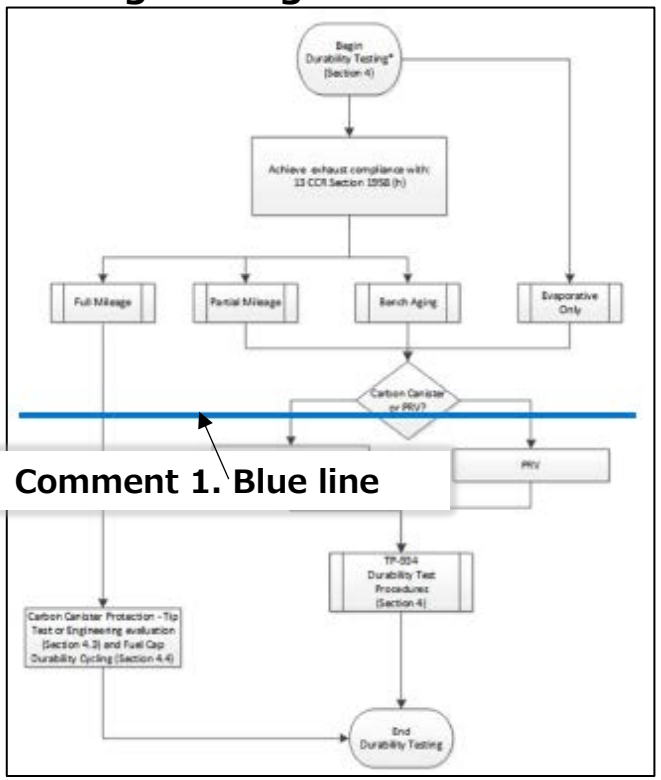
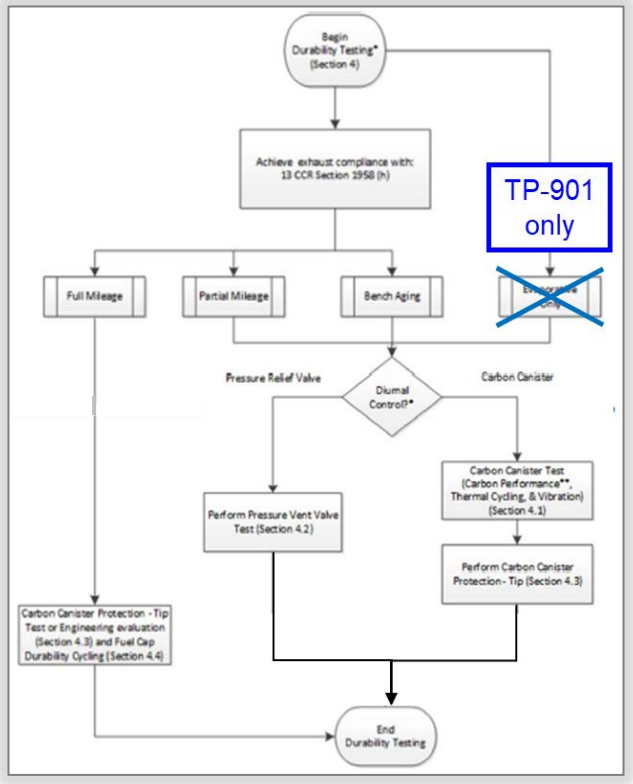
4 DURABILITY TESTING	A vehicle that has completed the full useful life service accumulation with the evaporative components installed throughout the duration of service accumulation may be exempt from the vibration durability requirements (Section 4.1.2), whichever are applicable. Durability testing shall include the steps outlined in Figure 2.	<Proposal> 1. Honda would like to know the meaning of blue line drawn in Figure 2. If original Figure 2 flowchart is eliminated and changed to revised Figure 2 flowchart, Honda proposes that the upper half of the original figure 2 flowchart should remain because it gives manufacturers guidance on how we should proceed evaporative durability tests according to the types of mileage accumulation tests. Honda also proposes that the lower half of the original figure 2 flowchart should be changed to the revised Figure 2 flowchart. 2. Honda proposes that if full durability mileage accumulation test is conducted, not only vibration durability requirements (Section 4.1.2) but also all carbon canister test (Section 4.1) and PRV test (Section 4.2) should be exempted.

■ **Original Figure 2**



■ **Revision ver. Flowchart**



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4 DURABILITY TESTING	Vehicles that have undergone partial mileage service accumulation with carbon canisters may use a hybrid approach to complete the vibration durability portion (Section 4.1.2) of this test procedure. If evaporative components have gone through a fraction of the useful life through service accumulation, then the remainder fraction of the useful life mileage may be applied to the number of cycles to complete durability testing for each section. • Example: Vehicle completed 20,000km of service accumulation and useful life is 50,000km. • 20,000 / 50,000 = 0.4 * 100% = 40% completed. • 100% - 40% = 60% remaining. • For carbon canister vibration cycling, the remaining cycles would be = 60% * 10,000,000 = 6,000,000 to complete vibration durability testing.	<Proposal> Honda proposes that if partial durability mileage accumulation test is conducted, not only vibration durability requirements (Section 4.1.2) but also all carbon canister test (Section 4.1) and PRV test (Section 4.2) should be allowed for the hybrid approach.

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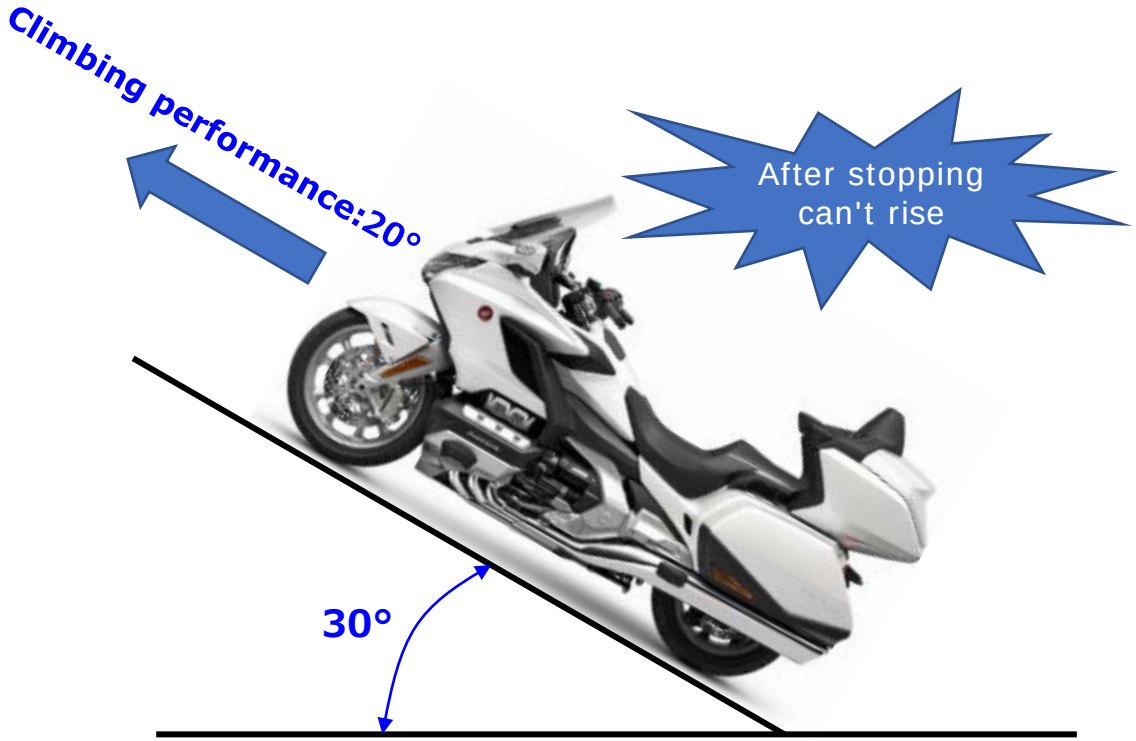
4 DURABILITY TESTING 4.3 Carbon Canister Protection - Tip Test	4.3.1.1 In less than 5 seconds, orient the vehicle such that the travel axis is tilted X degrees above and below the horizontal plane. See Figure 3 for a schematic. Hold the vehicle for 60 or more seconds, or such longer period of time as a manufacturer may choose, in both the positive and the negative position. **X shall be defined as 30° ± 2° for two-wheel ONMCs** as identified in Figure 3 below.	<Proposal> The horizontal tilt should be limited to the maximum slope capability of the vehicle. If the maximum gradeability angle of the vehicle does not reach 30 degrees, it is proposed that the horizontal inclination angle be the maximum gradeability angle of the vehicle.



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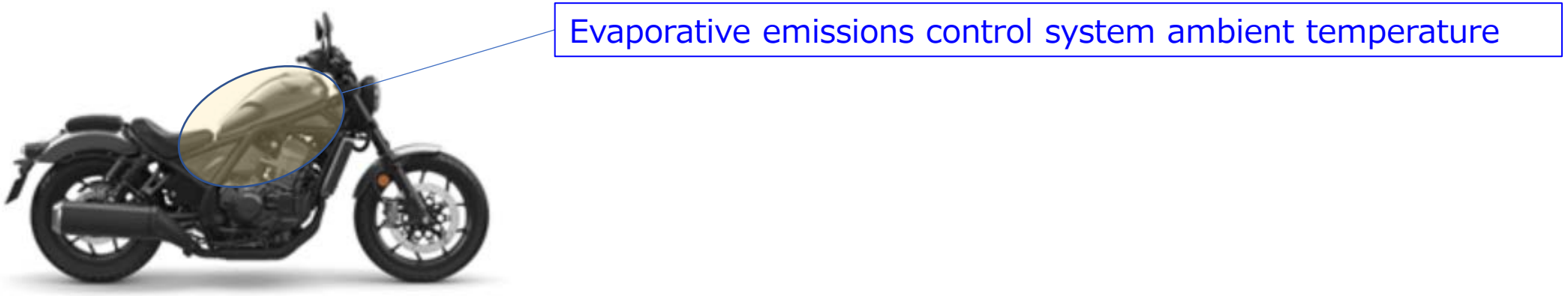
5 EVAPORATIVE EMISSIONS SYSTEM PRECONDITIONING 5.1Soak Fuel System Components	Manufacturers shall soak fuel system components. Precondition the tank and other fuel delivery system components by filling the tank to its nominal capacity with fresh test fuel. Cap the tank within one minute of filling. After filling the tank, start the vehicle engine and allow it to idle for 15 +/- 1 minutes. Components may be preconditioned using a whole vehicle or fuel system test rig. The test rig must include all the components of the fuel and evaporative emissions control system connected and oriented as they would be installed in the vehicle. The tank and fuel lines shall be filled with test fuel at the beginning of the test. a) Precondition the whole vehicle or fuel system rig continuously following one of the following 3 options defined below: 1. Soak continuously for a total of 3,360 hours while maintaining an ambient temperature no less than 68ºF;	<Proposal> We propose that if the temperature around the EVAP device component during exhaust gas endurance exceeds 20°C, it can be added as soak time. The reason for this is that it is believed that EVAP system parts will spend time at temperatures above 20°C regardless of whether the vehicle is stopped or moving.



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