

Article 5: The exhaust emissions standards of carbon monoxide (CO), hydrocarbons (HC), non-methane hydrocarbon (NMHC), nitrogen oxides (NO_x), formaldehyde (HCHO), particulate matter (PM), particulate number (PN) and smoke for diesel and alternative clean-fuel engine motor vehicles measured by driving cycle testing, visual determination and instrumentation measurement are specified in the following table:

Type of Mobile Source	Date of implementation	Application	Emission Standards							Remarks	
			Driving Cycle Testing					Judgment by visual determination	Instrument testing		
			Classification	CO	THC	NOx	PM	Smoke (% opacity)	Smoke (m ⁻¹ opacity)		Smoke (% pollution)
Motor vehicles with diesel and alternative clean fuel engines	Date of promulgation	New vehicle model certification New vehicle testing	—					—	—	50	I. New vehicle model certification and new vehicle testing: (1) Testing implemented simultaneously for new models and models in continuous mass production. (2) When instrument testing, opacity and pollution index standards occur at the same time, one of the three may be chosen. (3) Instrument testing methods for % pollution shall comply with CNS 11644 and CNS 11645. II. In-use vehicle testing: (1) Visually determined opacity of 40%, equivalent to Ringelmann No. 2. (2) Domestic vehicles leaving the plant and imported vehicles on board before promulgation date shall comply with these Standards. (3) Instrument testing: 1. The test method for smoke pollution percentage (%) shall comply with the Diesel Motor Vehicles Exhaust Emission Smoke Testing Methods and Procedures. 2. The test method for smoke opacity (m ⁻¹) shall comply with the Smoke Opacity Testing Methods and Procedures of Diesel Vehicles starting January 1, 2015.
		In-use Vehicle Testing	—					40	2.8	50	
	July 1, 1987	New vehicle model certification New vehicle testing	—					—	—	50	
		In-use Vehicle Testing	—					40	2.8	50	
	July 1, 1988	New vehicle model certification New vehicle testing	—					—	—	50	
		In-use Vehicle Testing	—					40	2.8	50	

Type of Mobile Source	Date of implementation	Application	Emission Standards									Remarks															
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			Classification		CO	THC	NOx	PM	Smoke (% opacity)	Smoke (m ³ opacity)	Smoke (% pollution)																
Motor vehicles with diesel and alternative clean fuel engines	July 1, 1993	New vehicle model certification New vehicle testing	Heavy-Duty Trucks and Buses	Trucks and buses with gross weight more than 3,500 kg or buses seating 10 or more passengers	10.0	1.3	6.0	0.7	—	—	40	I. The emission standards for heavy diesel and alternative clean-fuel engine motor vehicles adopt g/bhp-hr as the unit. The US Transient Cycle is performed on the engine dynamometers under the US Federal Test Procedures. II. The emission standards for light diesel and alternative clean-fuel engine motor vehicles adopt g/km as the unit. The LA-4 is performed on the chassis dynamometers under the US Federal Test Procedures. III. Vehicle weight: A vehicle with gross vehicle weight (GVW) between 2,500 kg and 3,500 kg may comply with the standards for heavy or light vehicles alternatively. IV. The durability test, which employs cumulative driving time, mileage, engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with these Standards. The warranty period means the effective use period of the emission control system. The durability test and warranty period requirements are shown in the following table: <table><tr><th>Gross vehicle weight</th><th>Durability test</th><th>Warranty period</th></tr><tr><td><3,859 kg (Trucks and buses)</td><td>5 years/80,000 km</td><td>5 years/80,000 km</td></tr><tr><td><3,859 kg~8,852 kg</td><td>8 years/176,000 km</td><td>5 years/80,000 km</td></tr><tr><td><8,853 kg~14,981 kg</td><td>8 years/296,000 km</td><td>5 years/160,000 km</td></tr><tr><td>>14,982 kg</td><td>8 years/464,000 km</td><td>5 years/160,000 km</td></tr></table>	Gross vehicle weight	Durability test	Warranty period	<3,859 kg (Trucks and buses)	5 years/80,000 km	5 years/80,000 km	<3,859 kg~8,852 kg	8 years/176,000 km	5 years/80,000 km	<8,853 kg~14,981 kg	8 years/296,000 km	5 years/160,000 km	>14,982 kg	8 years/464,000 km	5 years/160,000 km
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Light duty trucks	Trucks with gross weight less than 2,500 kg	6.2	0.5	1.4	0.38	—	—	40	V. Instrument testing methods for pollution percentage (%) shall comply with CNS 11644 and CNS 11645 between July 1, 1993 and June 30, 1994, and shall comply with CNS 11644 and CNS 11645 after July 1, 1994. VI. Domestic vehicle models leaving plant and imported vehicles on board after July 1, 1993 shall comply with these Standards. VII. Those heavy models that have been subjected to testing methods verified and used by the original manufacturer (limited to ECE 13 mode and JIS 6 mode) and for which the US Transient Cycle testing method is relevant may temporarily use this testing method from July 1, 1993 to June 30, 1994. VIII. Passenger-cargo Dual-purpose Station Wagons/Vans shall comply with the light truck standards. IX. Diesel sedans and minibus are prohibited from being imported and manufactured. The import and manufacture of various minibuses were prohibited as of January 1, 1995.																		
In-use Vehicle Testing	—						30	1.6	40	I. Instrument testing: (1) The test method for smoke pollution percentage (%) shall comply with the Diesel Motor Vehicles Exhaust Emission Smoke Testing Methods and Procedures. (2) The test method for smoke opacity (m ³) shall comply with the Smoke Opacity Testing Methods and Procedures of Diesel Vehicles starting January 1, 2015. II. Those in-use vehicles leaving plant or imported after July 1, 1993 shall comply with these Standards.																	

Type of Mobile Source	Date of implementation	Application	Emission Standards										Remarks															
			Driving Cycle Testing						Judgment by visual determination	Instrument testing																		
			Classification	CO	THC	NMHC	NOx	PM	Smoke (% opacity)	Smoke (m ³ opacity)	Smoke (% pollution)																	
Motor vehicles with diesel and alternative clean fuel engines	July 1, 1999	New vehicle model certification New vehicle testing	Heavy-Duty Trucks and Buses	Trucks and buses with gross weight more than 3,500 kg or buses seating 10 or more passengers	10.0	1.3	—	5.0	0.1	—	—	35	<p>I. The emission standards for heavy diesel and alternative clean-fuel engine motor vehicles adopt g/bhp-hr as the unit. The US Transient Cycle is performed on the engine dynamometers.</p> <p>II. The emission standards for light diesel and alternative clean-fuel engine motor vehicles adopt g/km as the unit. The LA-4 is performed on the chassis dynamometers.</p> <p>III. For heavy diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ total hydrocarbon (Total HC); for light diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane hydrocarbon (NMHC).</p> <p>IV. Vehicle weight: A vehicle with gross vehicle weight (GVW) between 2,500 kg and 3,500 kg may comply with the standards for heavy or light vehicles alternatively.</p> <p>V. The durability test, which employs cumulative driving time, mileage, engine operation hours, shall be performed as part of new vehicle model certification, and the vehicle shall still comply with these Standards. The warranty period means the effective use period of the emission control system. The durability test and warranty period requirements are shown in the following table:</p> <table><tr><th>Gross vehicle weight</th><th>Durability test</th><th>Warranty period</th></tr><tr><td><3,859 kg (Trucks and buses)</td><td>5 years/80,000 km</td><td>5 years/80,000 km</td></tr><tr><td><3,859 kg-8,852 kg</td><td>8 years/176,000 km</td><td>5 years/80,000 km</td></tr><tr><td><8,853 kg-14,981 kg</td><td>8 years/296,000 km</td><td>5 years/160,000 km</td></tr><tr><td>>14,982 kg</td><td>8 years/464,000 km</td><td>5 years/160,000 km</td></tr></table> <p>VI. Instrument testing methods for % pollution shall be conducted in accordance with CNS 11644 and CNS 11645.</p> <p>VII. Domestic vehicle models leaving plant and imported vehicles on board after July 1, 1999 shall comply with these Standards.</p> <p>VIII. Light-duty Passenger-cargo Dual-purpose Station Wagons/Vans shall comply with the light truck standards.</p> <p>IX. The import and manufacture of various minibuses were prohibited.</p>	Gross vehicle weight	Durability test	Warranty period	<3,859 kg (Trucks and buses)	5 years/80,000 km	5 years/80,000 km	<3,859 kg-8,852 kg	8 years/176,000 km	5 years/80,000 km	<8,853 kg-14,981 kg	8 years/296,000 km	5 years/160,000 km	>14,982 kg	8 years/464,000 km	5 years/160,000 km
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Light duty trucks	Trucks with gross weight less than 2,500 kg	2.11	—	0.155	0.625	0.05	—	—	35																			
In-use Vehicle Testing	—						35	1.2	35	<p>I. Instrument testing:</p> <p>(1) The test method for smoke pollution percentage (%) shall comply with the Diesel Motor Vehicles Exhaust Emission Smoke Testing Methods and Procedures.</p> <p>(2) The test method for smoke opacity (m³) shall comply with the Smoke Opacity Testing Methods and Procedures of Diesel Vehicles starting January 1, 2015.</p> <p>II. Those in-use vehicles leaving plant or imported after July 1, 1999 shall comply with these Standards.</p>																		

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Motor vehicles with diesel and alternative clean fuel engines	January 1, 2004	New vehicle model certification New vehicle testing	Heavy-Duty Trucks and Buses	Trucks and buses with gross weight more than 3,500 kg or buses seating 10 or more passengers	10.	1.3	—	5.0	0.10	—	—	35	<p>I. The emission standards for heavy diesel and alternative clean-fuel engine motor vehicles adopt g/bhp-hr as the unit. The US FTP-Transient is performed on the engine dynamometers under the US Federal Test Procedures.</p> <p>II. The emission standards for light diesel and alternative clean-fuel engine motor vehicles adopt g/km as the unit. The US FTP-75 driving cycle test is performed on the chassis dynamometers.</p> <p>III. For heavy diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ total hydrocarbon (Total HC); for natural gas-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane hydrocarbon (NMHC); for light diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane hydrocarbon (NMHC).</p> <p>IV. Vehicle weight: A truck with a gross vehicle weight (GVW) between 2,500 kg and 3,500 kg may comply with the standards for heavy or light vehicles alternatively.</p> <p>V. The durability test, which employs cumulative driving time, mileage, engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with these Standards. The warranty period means the effective use period of the emission control system. The durability test and warranty period requirements are shown in the following table:</p> <table><tr><th>Gross vehicle weight</th><th>Durability test</th><th>Warranty period</th></tr><tr><td><3,859 kg (minibus)</td><td>5 years/80,000 km</td><td>5 years/80,000 km</td></tr><tr><td><3,859 kg (Trucks and buses)</td><td>5 years/80,000 km</td><td>5 years/80,000 km</td></tr><tr><td>3,859 kg–8,852 kg</td><td>8 years/176,000 km</td><td>5 years/80,000 km</td></tr><tr><td>8,853 kg–14,981 kg</td><td>8 years/296,000 km</td><td>5 years/160,000 km</td></tr><tr><td>>14,982 kg</td><td>8 years/464,000 km</td><td>5 years/160,000 km</td></tr></table> <p>VI. The test method for instrument testing pollution percentage (%) shall comply with the Diesel Motor Vehicles Exhaust Emission Smoke Testing Methods and Procedures.</p> <p>VII. Domestic vehicle models leaving plant and imported vehicles on board after July 1, 2004 shall comply with these Standards.</p> <p>VIII. Light-duty Passenger-cargo Dual-purpose Station Wagons/Vans shall comply with the light truck standards.</p> <p>IX. The diesel minibuses that follow the testing requirements referred to in European Union Directive 98/69/EC, as subsequently amended, and the emission standards referred to in A(2000) and B(2005) of Section 5.3.1.4 of Annex I, as subsequently amended, shall be deemed complying with these Standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the said table and regulations.</p> <p>X. Since January 1, 2005, the diesel minibuses judged by the EU following the testing requirements referred to in European Union Directive 98/69/EC, as subsequently amended, and the emission standards referred to in B(2005) of Section 5.3.1.4 of Annex I, as subsequently amended, have been deemed complying with these Standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the said table and regulations.</p> <p>XI. Since January 1, 2006, the minibuses that follow the testing requirements referred to in European Union Directive 98/69/EC, as subsequently amended, and the emission standards referred to in B(2005) of Section 5.3.1.4 of Annex I, as subsequently amended, shall be deemed complying with these Standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the said table and regulations.</p>	Gross vehicle weight	Durability test	Warranty period	<3,859 kg (minibus)	5 years/80,000 km	5 years/80,000 km	<3,859 kg (Trucks and buses)	5 years/80,000 km	5 years/80,000 km	3,859 kg–8,852 kg	8 years/176,000 km	5 years/80,000 km	8,853 kg–14,981 kg	8 years/296,000 km	5 years/160,000 km	>14,982 kg	8 years/464,000 km	5 years/160,000 km
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Light duty trucks	Trucks with gross weight less than 2,500 kg	2.11	—	0.155	0.625	0.05	—	—	35																						
Minibus	Passenger vehicles with gross weight less than 3,500 kg	2.11	—	0.155	0.25	0.05	—	—	35																						
In-use Vehicle Testing	—	—	—	—	—	—	—	35	1.2	35	<p>I. Instrument testing:</p> <p>(1) The test method for smoke pollution percentage (%) shall comply with the Diesel Motor Vehicles Exhaust Emission Smoke Testing Methods and Procedures.</p> <p>(2) The test method for smoke opacity (m⁻¹) shall comply with the Smoke Opacity Testing Methods and Procedures of Diesel Vehicles starting January 1, 2015.</p> <p>II. Domestic vehicle models leaving plant and imported vehicles on board after January 1, 2004 shall comply with these Standards.</p>																				

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			Driving Cycle Testing							Judgment by visual determination Smoke (% opacity)	Instrument testing																					
			Classification	CO	NMOG	NOx	NMHC+ NOx	HC HO	PM		Smoke (m ⁻¹ opacity)	Smoke (% pollution)																				
Motor vehicles with diesel and alternative clean fuel engines	October 1, 2006	New vehicle model certification New vehicle testing	Heavy-Duty Trucks and Buses	Trucks and buses with gross weight more than 3,500 kg or buses seating 10 or more passengers	10.0	—	—	2.4 (2.5)	—	0.10	—	—	25	I. The emission standards for heavy diesel and alternative clean-fuel engine motor vehicles adopt g/bhp-hr as the unit. The US FTP-Transient Cycle is performed on the engine dynamometers. II. The emission standards for light diesel and alternative clean-fuel engine motor vehicles adopt g/km as the unit. The US FTP-75 driving cycle test is performed on the chassis dynamometers. III. For heavy diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane hydrocarbon (NMHC). For light diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane organic gas (NMOG). IV. For heavy diesel and alternative clean-fuel engine motor vehicles, the sum of non-methane hydrocarbon (NMHC) and nitrogen oxide (NOx) emission values shall comply with one of the following regulations: (1) The sum of non-methane hydrocarbon (NMHC) and nitrogen oxide (NOx) emission standards shall be 2.4 grams per brake horsepower-hours (g/bhp-hr). (2) The sum of non-methane hydrocarbon (NMHC) and nitrogen oxide (NOx) emission standards shall be 2.5 grams per brake horsepower-hours (g/bhp-hr). However, the NMHC emission standard shall be 0.5 grams per brake horsepower-hours (g/bhp-hr).																		
		New vehicle model certification New vehicle testing	Light duty trucks	Trucks with gross weight less than 2,500 kg	2.61	0.056	0.044	—	0.011	0.006	—	—	25	V. Vehicle weight: A truck with a gross vehicle weight (GVW) between 2,500 kg and 3,500 kg may comply with standards for heavy or light vehicles alternatively. VI. The durability test, which employs cumulative driving time, mileage, engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with these Standards. The warranty period means the effective use period of the emission control system. The durability test and warranty period requirements are shown in the following table: <table><tr><th>Gross vehicle weight</th><th>Durability test</th><th>Warranty period</th></tr><tr><td><3,859 kg (minibus)</td><td>10 years/192,000 km</td><td>10 years/192,000 km</td></tr><tr><td><3,859 kg (Trucks and buses)</td><td>10 years/160,000 km</td><td>5 years/80,000 km</td></tr><tr><td>3,859 kg~8,852 kg</td><td>10 years/176,000 km</td><td>5 years/80,000 km</td></tr><tr><td>8,853 kg~14,981 kg</td><td>10 years/296,000 km</td><td>5 years/160,000 km</td></tr><tr><td>>14,982 kg</td><td>10 years/696,000 km or 22,000 hours of engine operation</td><td>5 years/160,000 km</td></tr></table> VII. The test method for instrument testing pollution percentage (%) shall comply with the Diesel Motor Vehicles Exhaust Emission Smoke Testing Methods and Procedures.	Gross vehicle weight	Durability test	Warranty period	<3,859 kg (minibus)	10 years/192,000 km	10 years/192,000 km	<3,859 kg (Trucks and buses)	10 years/160,000 km	5 years/80,000 km	3,859 kg~8,852 kg	10 years/176,000 km	5 years/80,000 km	8,853 kg~14,981 kg	10 years/296,000 km	5 years/160,000 km	>14,982 kg	10 years/696,000 km or 22,000 hours of engine operation	5 years/160,000 km
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Minibus	Passenger vehicles with gross weight less than 3,500 kg	2.61	0.056	0.044	—	0.011	0.006	—	—	25	VIII. Domestic vehicle models leaving plant and imported vehicles on board after October 1, 2006 shall comply with these Standards. The vehicles with a certificate of compliance being issued after October 1, 2006 may be produced or manufactured continuously (subject to the exit-factory date, in the case of domestic vehicles) or imported (subject to the on board date, in the case of foreign vehicles) till December 31, 2006. IX. Light-duty Passenger-cargo Dual-purpose Station Wagons/Vans shall comply with the light truck standards. X. The diesel minicars that follow the testing requirements referred to in European Union Directive 98/69/EC, as subsequently amended, and the emission standards referred to in B(2005) of Section 5.3.1.4 of Annex I, as subsequently amended, shall be deemed complying with these Standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the said table and regulations. XI. The heavy-duty trucks and buses that follow the testing requirements referred to in European Union Directive 1999/96/EC, as subsequently amended, and the emission standards referred to in B1(2005) , B2(2008) and C(EEV) in Table 1 and Table 2 of Section 6.2.1 of Annex I, as subsequently amended, shall be deemed complying with these Standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the said table and regulations.																					
In-use Vehicle Testing					—					30	1.0	30	I. Instrument testing: (1) The test method for smoke pollution percentage (%) shall comply with the Diesel Motor Vehicles Exhaust Emission Smoke Testing Methods and Procedures. (2) The test method for smoke opacity (m ⁻¹) shall comply with the Smoke Opacity Testing Methods and Procedures of Diesel Vehicles starting January 1, 2015. II. Domestic vehicle models leaving plant and imported vehicles on board after October 1, 2006 shall comply with these Standards. The vehicles with a certificate of compliance being issued after October 1, 2006 may be produced or manufactured continuously (subject to the ex-factory date, in the case of domestic vehicles) or imported (subject to the on board date, in the case of foreign vehicles) till December 31, 2006.																			

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			Classification	Test type	CO	HC	NMHC	NOx	THC + NOx	PM	PN (#/km)	Smoke (m ³)	Smoke (opacity %)		Smoke (m ³ opacity)	Smoke (% pollution)																
Motor vehicles with diesel and alternative clean fuel engines	January 1, 2012	New vehicle model certification New vehicle testing	Heavy-Duty Trucks and Buses	Trucks and buses with gross weight more than 3,500 kg or buses seating 10 or more passengers	ESC	1.5	0.46	—	2.0	—	0.02	—	—	—	—	15	I. The emission standards for heavy diesel and alternative clean-fuel engine motor vehicles adopt g/kWh as the unit. The European Stationary Cycle (ESC), European Transient Cycle (ETC) and European Load Response (ELR) are performed on the engine dynamometers. II. The emission standards for light diesel and alternative clean-fuel engine motor vehicles adopt g/km as the unit. The NEDC is performed on the chassis dynamometers. III. The heavy diesel and alternative clean-fuel engine motor vehicles that use natural gas fuel only shall be subject to the ETC performed on the engine dynamometer to test CH ₄ . The CH ₄ emission standard value is calculated at 1.1 g/kWh. IV. Vehicle weight: A truck with a gross vehicle weight (GVW) between 2,500 kg and 3,500 kg may comply with the standards for heavy or light vehicles alternatively. V. Light-duty Passenger-cargo Dual-purpose Station Wagons/Vans shall comply with the light truck standards. VI. The durability test, which employs cumulative driving time, mileage, engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with these Standards. The warranty period means the effective use period of the emission control system. The durability test and warranty period requirements are shown in the following table: <table><tr><th>Classification</th><th>Durability test</th><th>Warranty period</th></tr><tr><td>Trucks and Buses GVW ≤ 3,500 kg (Only for NEDC)</td><td>160,000 km</td><td>5 years/100,000 km</td></tr><tr><td>Trucks and Buses GVW ≤ 3,500 kg Buses GVW: 3,501–5,000 kg</td><td>100,000 km</td><td>5 years/100,000 km</td></tr><tr><td>Trucks, GVW: 3,501–16,000 kg Buses, GVW: 5,001–7,500 kg</td><td>125,000 km</td><td>6 years/200,000 km</td></tr><tr><td>Trucks, GVW > 16,000 kg Buses, GVW > 7,500 kg</td><td>167,000 km</td><td>7 years/500,000 km</td></tr></table> VII. Reference mass: The curb weight of diesel vehicle plus 100 kg. The curb weight of a diesel vehicle means the weight of the motor vehicle prior to loading with persons or cargo; the engine shall contain the designated lubricating oil, the radiator shall contain the designated coolant, the fuel tank shall contain the designated fuel, and the motor vehicle shall contain accessories (spare tire and tools) designated by the original manufacturer. VIII. The test method for instrument testing pollution percentage (%) shall comply with the Diesel Motor Vehicles Exhaust Emission Smoke Testing Methods and Procedures. IX. Table 1 shows the emission standards with a unit of g/bhp-hr for heavy trucks and buses and alternative clean-fuel engine motor vehicles subject to the US FTP-Transient Cycle performed on engine dynamometers, as well as emission standards with a unit of g/km for light trucks and buses and alternative clean-fuel engine motor engine vehicles subject to the FTP-75 driving cycle test performed on body dynamometers. For heavy diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane hydrocarbon (NMHC). For light diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane organic gas (NMOG). The durability test, which employs cumulative driving time, mileage and engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with these Standards. The warranty period means the effective use period and warranty period of the emission control system. The durability test and warranty period requirements are shown in Table 2.	Classification	Durability test	Warranty period	Trucks and Buses GVW ≤ 3,500 kg (Only for NEDC)	160,000 km	5 years/100,000 km	Trucks and Buses GVW ≤ 3,500 kg Buses GVW: 3,501–5,000 kg	100,000 km	5 years/100,000 km	Trucks, GVW: 3,501–16,000 kg Buses, GVW: 5,001–7,500 kg	125,000 km	6 years/200,000 km	Trucks, GVW > 16,000 kg Buses, GVW > 7,500 kg	167,000 km	7 years/500,000 km
					Classification	Durability test	Warranty period																									
					Trucks and Buses GVW ≤ 3,500 kg (Only for NEDC)	160,000 km	5 years/100,000 km																									
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					Trucks, GVW > 16,000 kg Buses, GVW > 7,500 kg	167,000 km	7 years/500,000 km																									
ETC	4.0	—	0.55	2.0	—	0.03	—	—	—	—	—	—	—																			
ELR	—	—	—	—	—	—	—	—	—	0.5	—	—	—																			
Light duty trucks	Trucks with gross weight less than 3,500 kg	Truck with reference mass ≤ 1,305 kg	NEDC	0.500	—	—	0.180	0.230	0.0050	6.0×10 ⁻¹	—	—	—	—	15	Table 1. Emission Standards: <table><tr><th>Classification</th><th>CO</th><th>NMOG</th><th>NMHC</th><th>NOx</th><th>HCHO</th><th>Particulate matter</th></tr><tr><td>Heavy-Duty Trucks and Buses</td><td>10.0</td><td>—</td><td>0.14</td><td>0.20</td><td>—</td><td>0.01</td></tr></table>	Classification	CO	NMOG	NMHC	NOx	HCHO	Particulate matter	Heavy-Duty Trucks and Buses	10.0	—	0.14	0.20	—	0.01		
		Classification	CO	NMOG	NMHC	NOx	HCHO	Particulate matter																								
		Heavy-Duty Trucks and Buses	10.0	—	0.14	0.20	—	0.01																								
Truck with reference mass > 1,305kg and ≤ 1,760 kg	NEDC	0.630	—	—	0.235	0.295	0.0050	6.0×10 ⁻¹	—	—	—	—																				
Reference Mass > 1,760 kg	NEDC	0.740	—	—	0.280	0.350	0.0050	6.0×10 ⁻¹	—	—	—	—																				

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Type of Mobile Source	Date of implementation	Application	Emission Standards											Remarks																		
			Driving Cycle Testing								Judgment by visual determination	Instrument testing																				
			Classification	Test type	CO	HC	NMHC	NOx	THC + NOx	PM	PN(#/km)	Smoke (m ⁻¹)	Smoke (% opacity)		Smoke (m ⁻¹ opacity)	Smoke (% pollution)																
Motor vehicles with diesel and alternative clean fuel engines	January 1, 2015	New vehicle model certification New vehicle testing	Heavy-Duty Trucks and Buses	Trucks and buses with gross weight more than 3,500 kg or buses seating 10 or more passengers	ESC	1.5	0.46	—	2.0	—	0.02	—	—	—	I. The emission standards for heavy diesel and alternative clean-fuel engine motor vehicles adopt g/kWh as the unit. The ESC, ETC and ELR cycles are performed on the engine dynamometers. II. The emission standards for light diesel and alternative clean-fuel engine motor vehicles adopt g/km as the unit. The NEDC is performed on the chassis dynamometers. III. The heavy diesel and alternative clean-fuel engine motor vehicles that use natural gas fuel only shall be subject to the ETC performed on the engine dynamometer to test CH ₄ . The CH ₄ emission standard value is calculated at 1.1 g/kWh. IV. Vehicle weight: A truck with a gross vehicle weight (GVW) between 2,500 kg and 3,500 kg may comply with the standards for heavy or light vehicles alternatively. V. Light-duty Passenger-cargo Dual-purpose Station Wagons/Vans shall comply with the light truck standards. VI. The durability test, which employs cumulative driving time, mileage, engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with these Standards. The warranty period means the effective use period of the emission control system. The durability test and warranty period requirements are shown in the following table:																	
					ETC	4.0	—	0.55	2.0	—	0.03	—	—	—		0.5	—															
					ELR	—	—	—	—	—	—	—	—	0.5		—	—															
			Light duty trucks	Trucks with gross weight less than 3,500 kg	Truck with reference mass ≤ 1,305 kg	NEDC	0.500	—	—	0.180	0.230	0.0050	6.0×10 ⁻¹¹	—	—	—	<table><tr><th>Classification</th><th>Durability test</th><th>Warranty period</th></tr><tr><td>Trucks and Buses GVW ≤ 3,500 kg (Only for NEDC)</td><td>160,000 km</td><td>5 years/100,000 km</td></tr><tr><td>Trucks and Buses GVW ≤ 3,500 kg Buses GVW:3,501–5,000 kg</td><td>100,000 km</td><td>5 years/100,000 km</td></tr><tr><td>Trucks, GVW: 3,501–16,000 kg Buses, GVW: 5,001–7,500 kg</td><td>125,000 km</td><td>6 years/200,000 km</td></tr><tr><td>Trucks, GVW > 16,000 kg Buses, GVW > 7,500 kg</td><td>167,000 km</td><td>7 years/500,000 km</td></tr></table>	Classification	Durability test	Warranty period	Trucks and Buses GVW ≤ 3,500 kg (Only for NEDC)	160,000 km	5 years/100,000 km	Trucks and Buses GVW ≤ 3,500 kg Buses GVW:3,501–5,000 kg	100,000 km	5 years/100,000 km	Trucks, GVW: 3,501–16,000 kg Buses, GVW: 5,001–7,500 kg	125,000 km	6 years/200,000 km	Trucks, GVW > 16,000 kg Buses, GVW > 7,500 kg	167,000 km	7 years/500,000 km
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Truck with reference mass > 1,305kg and ≤ 1,760 Kg	NEDC	0.630	—	—	0.235	0.295	0.0050	6.0×10 ⁻¹¹	—	—	—	—																				
	Reference Mass > 1,760 kg	NEDC	0.740	—	—	0.280	0.350	0.0050	6.0×10 ⁻¹¹	—	—	—																				
																VII. Reference mass: The curb weight of diesel vehicle plus 100 kg. The curb weight of a diesel vehicle means the weight of the diesel vehicle prior to loading with persons or cargo; the engine shall contain the designated lubricating oil, the radiator shall contain the designated coolant, the fuel tank shall contain the designated fuel, and the motor vehicle shall contain accessories (spare tire and tools) designated by the original manufacturer. VIII. Instrument testing: (1) The instrument testing for smoke opacity (m ⁻¹) shall comply with the Smoke Opacity Testing Methods and Procedures of Diesel Vehicles. (2) The smoke testing method complying with the relevant smoke compliance certificate required by the relevant testing regulations of European Union Directive 72/306/EC or UN/ECE Regulation No. 24, as subsequently amended, and smoke emission results of the instrument testing complying with these standards, shall be deemed complying with these Standards. IX. Table 1 shows the emission standards with a unit of g/bhp-hr for heavy trucks and buses and alternative clean-fuel engine motor vehicles subject to the US FTP-Transient Cycle performed on engine dynamometers, as well as emission standards with a unit of g/km for light trucks and buses and alternative clean-fuel engine motor vehicles subject to the US FTP-75 driving cycle test performed on body dynamometers. The durability test, which employs cumulative driving time, mileage and engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with the Standards referred to in the following Table 1. The warranty period means the effective use period and warranty period of the emission control system. The durability test and warranty period requirements are shown in Table 2.																

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Type of Mobile Source	Date of implementation	Application	Emission Standards											Remarks																																													
			Driving Cycle Testing									Judgment by visual determination	Instrument testing																																														
			Classification	Test type	CO	THC	NO _x	THC + NO _x	PM	PN	NH ₃ (ppm)		Smoke (% opacity)		Smoke (m ³ opacity)	Smoke (% pollution)																																											
Motor vehicles with diesel and alternative clean fuel engines	September 1, 2019	New vehicle model certification New vehicle testing	Heavy-Duty Trucks and Buses	Trucks and buses with a gross weight more than 3,500 kg or buses seating 10 or more passengers	WHSC	1500	130	400	—	10	8.0×10 ¹¹	10	—	0.5	—	I. The emission standards for heavy diesel and alternative clean-fuel engine motor vehicles adopt mg/kWh as the unit, while the PN is calculated as #/kWh. The World Harmonized Stationary Cycle (WHSC), World Harmonized Transient Cycle (WHTC) and World Harmonized Not-To-Exceed Cycle (WNTE) are performed on the engine dynamometers. II. The emission standards for light diesel and alternative clean-fuel engine motors vehicles adopt mg/km as the unit, while the PN is calculated as #/kWh. The test was conducted under NEDC or WLTC required by EU. III. Vehicle weight: A vehicle with a gross vehicle weight (GVW) between 2,500 kg and 3,500 kg may comply with standards for heavy or light vehicles alternatively. IV. Light-duty Passenger-cargo Dual-purpose Station Wagons/Vans shall comply with the light truck standards. V. The durability test, which employs cumulative driving time, mileage, engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with these Standards. The warranty period means the effective use period of the emission control system. The durability test and warranty period requirements are shown in the following table: <table><tr><th>Classification</th><th>Durability test</th><th>Warranty period</th></tr><tr><td>Trucks and Buses GVW ≤ 3,500 kg (Only for NEDC or WLTC)</td><td>160,000 km</td><td>5 years/100,000 km</td></tr><tr><td>Trucks and Buses GVW ≤ 3,500 kg Buses GVW: 3,501–5,000 kg</td><td>160,000 km</td><td>5 years/160,000 km</td></tr><tr><td>Trucks, GVW: 3,501–16,000 kg Buses, GVW: 5,001–7,500 kg</td><td>188,000 km</td><td>6 years/300,000 km</td></tr><tr><td>Trucks, GVW > 16,000 kg Buses, GVW > 7,500 kg</td><td>233,000 km</td><td>7 years/700,000 km</td></tr></table> VI. Reference mass: The reference mass of tested vehicles for NEDC or WLTC driving cycle tests shall be defined as the stipulations defined in Directive 692/2008/EC, as amended from time to time. VII. Instruction testing: (1) The test method for smoke opacity (m ⁻¹) shall comply with the Smoke Opacity Testing Methods and Procedures of Diesel Vehicles. (2) The smoke testing method complying with the relevant smoke compliance certificate required by the relevant testing regulations of European Union Directive 72/306/EC or UN/ECE Regulation No. 24, as amended form time to time, and smoke emission results of the instrument testing complying with these standards, shall be deemed complying with these Standards. VIII. Table 1 shows the emission standards with a unit of g/bhp-hr for heavy trucks and buses and alternative clean-fuel engine motor vehicles subject to the US FTP-Transient Cycle performed on engine dynamometers, as well as emission standards with a unit of mg/km for light trucks and buses and alternative clean-fuel engine motor engine vehicles subject to the US FTP-75 driving cycle test performed on body dynamometers. For heavy diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane hydrocarbon (NMHC). For light diesel and alternative clean-fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane organic gas (NMOG). The durability test, which employs cumulative driving time, mileage and engine operation hours, shall be performed as part of the new vehicle model certification, and the vehicle shall still comply with the Standards referred to in the following Table 1. The warranty period means the effective use period and warranty period of the emission control system. The durability test and warranty period requirements are shown in the following Table 2: <table><tr><th colspan="7">Table 1. Emission Standards:</th></tr><tr><th>Classification</th><th>CO</th><th>NMOG +NO_x</th><th>NMHC</th><th>NO_x</th><th>HCHO</th><th>Particulate matter</th></tr><tr><td>Heavy-Duty Trucks and Buses</td><td>10.0</td><td>—</td><td>0.14</td><td>0.10</td><td>—</td><td>0.01</td></tr><tr><td>Light duty trucks and buses</td><td>1000</td><td>19</td><td>—</td><td>—</td><td>3</td><td>2</td></tr></table>	Classification	Durability test	Warranty period	Trucks and Buses GVW ≤ 3,500 kg (Only for NEDC or WLTC)	160,000 km	5 years/100,000 km	Trucks and Buses GVW ≤ 3,500 kg Buses GVW: 3,501–5,000 kg	160,000 km	5 years/160,000 km	Trucks, GVW: 3,501–16,000 kg Buses, GVW: 5,001–7,500 kg	188,000 km	6 years/300,000 km	Trucks, GVW > 16,000 kg Buses, GVW > 7,500 kg	233,000 km	7 years/700,000 km	Table 1. Emission Standards:							Classification	CO	NMOG +NO _x	NMHC	NO _x	HCHO	Particulate matter	Heavy-Duty Trucks and Buses	10.0	—	0.14	0.10	—	0.01	Light duty trucks and buses	1000	19	—	—	3	2
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Light duty trucks	Trucks with gross weight less than 3,500 kg	NEDC or WLTC	500	—	80	170	4.5	6.0×10 ¹¹	—	—	0.5	—																																															

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