

## **Proposed Revision to Tables of Article 5 of the Vehicular Air Pollutant Emission Standards**

By Environmental Protection Administration

### Article 5

Driving cycle testing, judgment by visual determination, instrument testing shall be performed to determine whether exhaust pipe emissions of diesel and alternative clean fuel engine motor vehicles comply with carbon monoxide (CO), hydrocarbon (HC), nitrogen oxides (NO<sub>x</sub>), formaldehyde (HCHO) particulate pollutants, and smoke standards. Regulations are designated in the following table:

Transportation vehicle type	Date of Implementation	Application	Emissions Standards							Remarks
			Driving cycle testing				Judgment by visual determination	Instrument testing		
			Type	CO	THC	NOx	Smoke (% opacity)	Smoke (% opacity)	Smoke (% pollution)	
Diesel and alternative clean fuel engine motor vehicles	Date of promulgation	New vehicle model certification, new vehicle testing						40	50	1. 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 method for pollution percentage shall comply with CNS 11644 and CNS 11645. 2. In-use vehicle testing: Visually determined opacity of 40%, equivalent to Ringelmann No. 2.
		In-use Vehicle Testing				40	40	50		
	July 1, 1987	New vehicle model certification, new vehicle testing						50		
		In-use Vehicle Testing				40	40	50		
	July 1, 1988	New vehicle model certification, new vehicle testing						50		
		In-use Vehicle Testing				40		50		

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Diesel and alternative clean fuel engine motor vehicles	July 1, 1993	New vehicle model certification, new vehicle testing	Buses and trucks	Buses and trucks with gross weight over 3,500kg or seating 10 or more persons	10.0	1.3	6.0	0.7			40	<p>1. Heavy diesel and alternative clean fuel engine motor vehicles shall employ emission standards of g/bhp-hr and during US Transient Cycle driving, shall be subjected to engine dynamometer testing.</p> <p>2. Light diesel and alternative clean fuel engine motor vehicles shall employ emission standards of g/km and during LA-4 driving, shall be subjected to vehicle body dynamometer testing.</p> <p>3. Vehicle weight means gross vehicle weight (GVW) vehicles with a weight between 2,500kg and 3,500kg may freely adopt heavy or light vehicle standards.</p> <p>4. Durability test: Durability testing employing cumulative driving time or mileage shall be performed as part of new vehicle model certification, and vehicle shall still comply with these standards. Regulations are designated in the table below.</p> <p>"Warranty period" means the effective use period of the emission control system. Regulations are designated in the table below.</p> <table border="1"> <thead> <tr> <th>Gross weight</th> <th>Durability test</th> <th>Warranty period</th> </tr> </thead> <tbody> <tr> <td>&lt;3,859kg (passenger vehicles)</td> <td>5 years/80,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;3,859kg-8,852kg</td> <td>8 years/176,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;8,852kg~14,981kg</td> <td>8 years/296,000km</td> <td>5 years/160,000km</td> </tr> <tr> <td>&gt;14,981kg</td> <td>8 years/464,000km</td> <td>5 years/160,000km</td> </tr> </tbody> </table> <p>5. 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.</p> <p>6. Domestic vehicle models leaving the plant and imported vehicles on-ship after July 1, 1993 shall comply with these Standards.</p> <p>7. 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.</p> <p>8. Light truck standards are applicable to passenger/cargo dual-purpose vehicles.</p> <p>9. The import and manufacture of diesel sedans and station wagons for use as little buses is prohibited. The import and manufacture of diesel little buses was prohibited starting January 1, 1995.</p>	Gross weight	Durability test	Warranty period	<3,859kg (passenger vehicles)	5 years/80,000km	5 years/80,000km	<3,859kg-8,852kg	8 years/176,000km	5 years/80,000km	<8,852kg~14,981kg	8 years/296,000km	5 years/160,000km	>14,981kg	8 years/464,000km	5 years/160,000km
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Light Trucks	Trucks with gross weight less than 2,500kg	6.2	0.5	1.4	0.38			40																			
In-use Vehicle Testing								30		40	<p>1. Instrument testing methods for pollution percentage shall comply with CNS 11644 standards between July 1, 1993 and June 30, 1994. Instrument testing methods for pollution percentage shall comply with CNS 11644 and CNS 11645 standards starting January 1, 1995.</p> <p>2. Domestic vehicles leaving the plant and imported vehicles on-ship after July 1, 1993 shall comply with these standards.</p>																

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Diesel and alternative clean fuel engine motor vehicles	July 1, 1999	New vehicle model certification, new vehicle testing	Buses and trucks	Buses and trucks with gross weight over 3,500kg or seating 10 or more persons	10.0	1.3		5.0	0.1		35	<p>1. Heavy diesel and alternative clean fuel engine motor vehicles shall employ emission standards of g/bhp-hr and during US Transient Cycle driving, shall be subjected to engine dynamometer testing.</p> <p>2. Light diesel and alternative clean fuel engine motor vehicles shall employ emission standards of g/kilometers g/km and during LA-4 driving, shall be subjected to vehicle body dynamometer testing.</p> <p>3. 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>4. Vehicle weight means gross vehicle weight (GVW) vehicles with a weight between 2,500kg and 3,500kg may freely adopt heavy or light vehicle standards.</p> <p>5. Durability test: Durability testing employing cumulative driving time or mileage shall be performed as part of new vehicle model certification, and vehicle shall still comply with these standards. Regulations are designated in the table below.</p> <p>"Warranty period" means the effective use period of the emission control system. Regulations are designated in the table below.</p> <table border="1"> <thead> <tr> <th>Gross weight</th> <th>Durability test</th> <th>Warranty period</th> </tr> </thead> <tbody> <tr> <td>&lt;3,859kg (passenger vehicles)</td> <td>5 years/80,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;3,859kg-8,852kg</td> <td>8 years/176,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;8,852kg~14,981kg</td> <td>8 years/296,000km</td> <td>5 years/160,000km</td> </tr> <tr> <td>&gt;14,981kg</td> <td>8 years/464,000km</td> <td>5 years/160,000km</td> </tr> </tbody> </table> <p>6. Instrument testing methods for pollution percentage shall comply with CNS 11644 and CNS 11645 standards.</p> <p>7. Domestic vehicle models leaving the plant and imported vehicles on-ship after July 1, 1999 shall comply with these Standards.</p> <p>8. Light passenger/cargo dual-purpose vehicles shall employ light truck standards.</p> <p>9. The import and manufacture of diesel little buses is prohibited.</p>	Gross weight	Durability test	Warranty period	<3,859kg (passenger vehicles)	5 years/80,000km	5 years/80,000km	<3,859kg-8,852kg	8 years/176,000km	5 years/80,000km	<8,852kg~14,981kg	8 years/296,000km	5 years/160,000km	>14,981kg	8 years/464,000km	5 years/160,000km
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Light Trucks	Trucks with gross weight less than 2,500kg	2.11		0.155	0.625	0.05		35																			
In-use Vehicle Testing								35	35	<p>1. Instrument testing methods for pollution percentage shall comply with CNS 11644 and CNS 11645 standards.</p> <p>2. Domestic vehicles leaving the plant and imported vehicles on-ship after July 1, 1999 shall comply with these standards.</p>																	

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Diesel and alternative clean fuel engine motor vehicles	January 1, 2004	New vehicle model certification, new vehicle testing	Buses and trucks	Trucks with gross weight over 3,500kg or buses seating 10 or more persons	10.0	1.3		5.0	0.1			35	<p>1. Heavy diesel and alternative clean fuel engine motor vehicles shall employ emission standards of g/bhp-hr and during US FTP Transient Cycle driving, shall be subjected to engine dynamometer testing.</p> <p>2. Light diesel and alternative clean fuel engine motor vehicles shall employ emission standards of g/km and shall be subject to US FTP-75 vehicle body dynamometer testing.</p> <p>3. For heavy diesel and alternative clean fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ total hydrocarbon (Total HC) Natural gas fuel vehicles hydrocarbon (HC) emissions shall employ non-methane hydrocarbon (NMHC) standards of 1.2g/brake horsepower-hours (g/bhp-hr); for light diesel and alternative clean fuel engine motor vehicles, hydrocarbon (HC) emissions shall employ non-methane hydrocarbon (NMHC).</p> <p>4. Trucks with a gross weight (GVW) between 2,500kg and 3,500kg may freely adopt heavy or light vehicle standards.</p> <p>5. Durability test: Durability testing employing cumulative driving time or mileage shall be performed as part of new vehicle model certification, and vehicle shall still comply with these standards. Regulations are designated in the table below.</p> <p>"Warranty period" means the effective use period of the emission control system. Regulations are designated in the table below.</p> <table border="1"> <thead> <tr> <th>Gross weight</th> <th>Durability test</th> <th>Warranty period</th> </tr> </thead> <tbody> <tr> <td>&lt;3,859kg (little bus)</td> <td>5 years/80,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;3,859kg (passenger vehicles)</td> <td>5 years/80,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;3,859kg-8,852kg</td> <td>8 years/176,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;8,852kg-14,981kg</td> <td>8 years/296,000km</td> <td>5 years/160,000km</td> </tr> <tr> <td>&gt;14,981kg</td> <td>8 years/464,000km</td> <td>5 years/160,000km</td> </tr> </tbody> </table> <p>6. Instrument testing methods for pollution percentage shall comply with the "Diesel Motor Vehicles Exhaust Emissions Testing Methods and Procedures".</p> <p>7. Domestic vehicle models leaving the plant and imported vehicles on-ship after January 1, 2004 shall comply with these Standards.</p> <p>8. Light truck standards are applicable to passenger/cargo dual-purpose vehicles.</p> <p>9. Diesel minibuses complying with relevant testing regulations of European Union Directive 98/69EC and subsequently revised regulations, and complying with emission standards A (2000) and B (2005) and subsequently revised emission standards in the tables of Annex I, Section 5.3.1.4, shall be deemed to comply with these standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the foregoing table and said regulations.</p> <p>10. Starting January 1, 2005, new diesel little buses recognized by the European Union as complying with relevant testing regulations of European Union Directive 98/69/EC and subsequently revised regulations, and complying with B (2005) emission standards and subsequently revised emission standards in the tables of Annex I, Section 5.3.1.4, shall be deemed to comply with these standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the foregoing table and said regulations.</p> <p>11. Starting January 1, 2006, all diesel little buses recognized by the European Union as complying with relevant testing regulations of European Union Directive 98/69/EC and subsequently revised regulations, and complying with B (2005) emission standards and subsequently revised emission standards in the tables of Annex I, Section 5.3.1.4, shall be deemed to comply with these standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the foregoing table and said regulations.</p>	Gross weight	Durability test	Warranty period	<3,859kg (little bus)	5 years/80,000km	5 years/80,000km	<3,859kg (passenger vehicles)	5 years/80,000km	5 years/80,000km	<3,859kg-8,852kg	8 years/176,000km	5 years/80,000km	<8,852kg-14,981kg	8 years/296,000km	5 years/160,000km	>14,981kg	8 years/464,000km	5 years/160,000km
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Light Trucks	Trucks with gross weight less than 2,500kg	2.11		0.155	0.625	0.05				35																					
Minibus	Buses with gross weight less than 3,500kg	2.11		0.155	0.25	0.05				35																					
In-use Vehicle Testing									35		35	<p>1. Instrument testing methods for pollution percentage shall comply with the "Diesel Motor Vehicles Exhaust Emissions Testing Methods and Procedures".</p> <p>2. Domestic vehicle models leaving the plant and imported vehicles on-ship after January 1, 2004 shall comply with these Standards.</p>																			

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			Type	CO	NMOG	NOx	NMHC +NOx	HCHO	Particulate Pollutants	Smoke (% opacity)	Smoke (% opacity)	Smoke (% pollution)																				
Diesel and alternative clean fuel engine motor vehicles	October 1, 2006	New vehicle model certification, new vehicle testing	Buses and trucks	Trucks with gross weight over 3,500kg or buses seating 10 or more persons	10.0			2.4(2.5)		0.10			25	<p>1. Heavy diesel and alternative clean fuel engine motor vehicles shall employ emission standards of g/bhp-hr and shall be subject to US FTP Transient Cycle driving, shall be subjected to engine dynamometer testing.</p> <p>2. Light diesel and alternative clean fuel engine motor vehicles shall employ emission standards of g/km and shall be subject to US FTP-75 vehicle body dynamometer testing.</p> <p>3. 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 gases (NMOG).</p> <p>4. For heavy diesel and alternative clean fuel engine motor vehicles, the sum of non-methane hydrocarbon (NMHC) and nitrogen oxide (NOx) emissions values shall comply with one of the following regulations:</p> <p>(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).</p> <p>(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) but the NMHC emission standard shall be 0.5 grams per brake horsepower-hours (g/bhp-hr).</p> <p>5. Trucks with a gross weight (GVW) between 2,500kg and 3,500kg may freely adopt heavy or light vehicle standards.</p> <p>6. Durability test: Durability testing employing cumulative driving time, mileage, engine operation hours shall be performed as part of new vehicle model certification, and vehicle shall still comply with these standards. Regulations are designated in the table below.</p> <p>"Warranty period" means the effective use period of the emission control system. Regulations are designated in the table below.</p> <table border="1"> <thead> <tr> <th>Gross weight</th> <th>Durability test</th> <th>Warranty period</th> </tr> </thead> <tbody> <tr> <td>&lt;3,859kg (little bus)</td> <td>10 years/192,000km</td> <td>10 years/192,000km</td> </tr> <tr> <td>&lt;3,859kg (passenger vehicles)</td> <td>10 years/160,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;3,859kg-8,852kg</td> <td>10 years/176,000km</td> <td>5 years/80,000km</td> </tr> <tr> <td>&lt;8,852kg-14,981kg</td> <td>10 years/296,000km</td> <td>5 years/160,000km</td> </tr> <tr> <td>&gt;14,981kg</td> <td>10 years/696,000km or 22,000 hours of engine operation</td> <td>5 years/160,000km</td> </tr> </tbody> </table> <p>7. Instrument testing methods for pollution percentage shall comply with the "Diesel Motor Vehicles Exhaust Emissions Testing Methods and Procedures".</p> <p>8. Domestic vehicle models leaving the plant and imported vehicles on-ship after October 1, 2006 shall comply with these Standards. Those vehicle models which have already received compliance verification may be produced, manufactured (for domestic vehicles, refer to date the vehicle has left the plant), or imported (for imported vehicles, refer to date the vehicle is on-ship) until December 31, 2006.</p> <p>9. Light truck standards are applicable to passenger/cargo dual-purpose vehicles.</p> <p>10. Small diesel vehicles complying with relevant testing regulations of European Union Directive 98/69/EC and subsequently revised regulations, and complying with B (2005) emission standards and subsequently revised emission standards in the tables of Annex I, Section 5.3.1.4, shall be deemed to comply with these standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the foregoing table and said regulations.</p> <p>11. Buses and trucks complying with relevant testing regulations of European Union Directive 1999/96/EC and subsequently revised regulations, and complying with B1 (2005), B2 (2008), or C (EEV) emission standards and subsequently revised emission standards in Appendix I, Section 6.2.1, Table 1 shall be deemed to comply with these standards. However, smoke emission standards for judgment by visual determination and instrument testing shall comply with the foregoing table and said regulations.</p>	Gross weight	Durability test	Warranty period	<3,859kg (little bus)	10 years/192,000km	10 years/192,000km	<3,859kg (passenger vehicles)	10 years/160,000km	5 years/80,000km	<3,859kg-8,852kg	10 years/176,000km	5 years/80,000km	<8,852kg-14,981kg	10 years/296,000km	5 years/160,000km	>14,981kg	10 years/696,000km or 22,000 hours of engine operation	5 years/160,000km
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Light Trucks	Trucks with gross weight less than 2,500kg	2.61	0.056	0.044		0.011	0.006			25	<p>1. Instrument testing methods for pollution percentage shall comply with the "Diesel Motor Vehicles Exhaust Emissions Testing Methods and Procedures".</p> <p>2. Domestic vehicle models leaving the plant and imported vehicles on-ship after October 1, 2006 shall comply with these Standards. Those vehicle models which have already received compliance verification may be produced, manufactured (for domestic vehicles, refer to date the vehicle has left the plant), or imported (for imported vehicles, refer to date the vehicle is on-ship) until December 31, 2006.</p>																					
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