Annex

AIR POLLUTION CONTROL (VEHICLE DESIGN STANDARDS) (EMISSION) (AMENDMENT) REGULATION 1998

(Made under section 43 of the Air Pollution Control Ordinance (Cap. 311) after consultation with the Advisory Council on the Environment)

1. Commencement

This Regulation shall come into operation on a day to be appointed by the Secretary for Planning, Environment and Lands by notice in the Gazette.

2. Interpretation

Regulation 2 of the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations (Cap. 311 sub. leg.) is amended by adding -

""engine of direct-injection type" ( ) means a compression-ignition engine in which the fuel is injected into the combustion space directly above the piston crown;".

3. Regulation substituted

Regulations 7 and 7A are repealed and the following substituted -

"7. **Vehicle design standards for various motor vehicles**

(1) Subject to regulation 9 -

(a) every private car or taxi which is equipped with a positive-ignition engine shall be so constructed that the emission from that private car or taxi conforms -

(i) if it is registered between 1 January 1992 and 30 September 1998 (both dates inclusive), to the standards specified in Part I(a), (b) or (c) of Schedule 2;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part I(a), (b) or (c) of Schedule 5;

(b) every private car which is equipped with a compression-ignition engine shall be so constructed that the emission from that private car conforms -

(i) if it is registered between 1 January 1992 and 31 March 1998 (both dates inclusive), to the standards specified in Part II(a), (b) or (c) of Schedule 2;

(ii) if it is registered on or after 1 April 1998, to the standards specified in Schedule 4;

(c) every taxi which is equipped with a compression-ignition engine shall be so constructed that the emission from that taxi conforms -

(i) if it is registered between 1 January 1992 and 30 September 1998 (both dates inclusive), to the standards specified in Part II(a), (b) or (c) of Schedule 2;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part II(a), (b) or (c) of Schedule 5;

(d) every goods vehicles or light bus which is equipped with a positive-ignition engine and which has a design weight of not more than 1.7 tonnes shall be so constructed that the emission from that goods vehicle or light bus conforms -

(i) if it is registered between 1 January 1992 and 30 September 1998 (both dates inclusive), to the standards specified in Part III(a), (b) or (c) of Schedule 2;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part III(a), (b), or (c) of Schedule 5;

(e) every goods vehicle or light bus which is equipped with a compression-ignition engine and which has a design weight of not more than 1.7 tonnes shall be so constructed that the emission from that goods vehicle or light bus conforms -

(i) if it is registered between 1 January 1992 and 30 September 1998 (both dates inclusive), to the standards specified in Part IV(a), (b) or (c) of Schedule 2;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part IV(a) or (b) of Schedule 5;

(f) every goods vehicle or light bus which is equipped with a positive-ignition engine and which has a design weight of more than 1.7 tonnes but not more than 2.5 tonnes shall be so constructed that the emission from that goods vehicle or light bus conforms -

(i) if it is registered between 1 January 1992 and 30 September 1998 (both dates inclusive), to the standards specified in Part V(a), (b) or (c) of Schedule 2;

(ii) if it is registered on or after 1 October 1998, to standards specified in Part V(a), (b) or (c) of Schedule 5;

(g) every goods vehicle or light bus which is equipped with a compression-ignition engine and which has a design weight of more than 1.7 tonnes but not more than 2.5 tonnes shall be so constructed that the emission from that goods vehicle or light bus conforms -

(i) if it is registered between 1 January 1992 and 30 September 1998 (both dates inclusive), to the standards specified in Part VI(a), (b) or (c) of Schedule 2;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part VI(a) or (b) of Schedule 5;

(h) every goods vehicle or light bus which is equipped with a positive-ignition engine and which has a design weight of more than 2.5 tonnes

but not more than 3.5 tonnes shall be or shall have such engine so constructed that the emission from that goods vehicle or light bus conforms -

(i) if it is registered between 1 April 1995 and 30 September 1998 (both dates inclusive), to the standards specified in Part I(a), (b) or (c) of Schedule 3;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part VII(a), (b) or (c) of Schedule 5;

(i) every goods vehicle or light bus which is equipped with a compression-ignition engine and which has a design weight of more than 2.5 tonnes but not more than 3.5 tonnes shall be so constructed that the emission from that goods vehicle or light bus conforms -

(i) if it is registered between 1 April 1995 and 30 September 1998 (both dates inclusive), to the standards specified in Part II(a) or (b) of Schedule 3;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part VIII(a) or (b) of Schedule 5;

(j) every goods vehicle, light bus or bus which is equipped with a positive-ignition engine and which has a design weight of more than 3.5 tonnes shall have such engine so constructed that the emission from that goods vehicle, light bus or bus conforms -

(i) if it is registered between 1 April 1995 and 30 September 1998 (both dates inclusive), to the standards specified in Part III(a) or (b) of Schedule 3;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part IX(a) or (b) of Schedule 5;

(k) every goods vehicle, light bus or bus which is equipped with a compression-ignition engine and which has a design weight of more than 3.5 tonnes but not more than 4 tonnes shall have such engine so constructed that the emission from that goods vehicle, light bus or bus conforms -

(i) if it is registered between 1 April 1995 and 30 September 1998 (both dates inclusive), to the standards specified in Part IV(a) or (b) of Schedule 3;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part X(a) or (b) of Schedule 5.

(1) every goods vehicle, light bus or bus which is equipped with a compression-ignition engine and which has a design weight of more than 4 tonnes shall have such engine so constructed that the emission from that goods vehicle, light bus or bus conforms -

(i) if it is registered between 1 April 1995 and 30 September 1998 (both dates inclusive), to the standards specified in Part IV(c) or (d) of Schedule 3;

(ii) if it is registered on or after 1 October 1998, to the standards specified in Part X(a) or (b) of Schedule 5.

(2) In this regulation, "private car" ( ), "taxi" ( ), "goods vehicle" ( ), "light bus" ( ) and "bus" ( ) shall have the meanings assigned to them, respectively, in section 2 of the Road Traffic Ordinance (Cap. 374).".

4. Regulation substituted

Regulation 8 is repealed and the following substituted -

"**8. Compliance with more stringent standards**

Notwithstanding the provisions of regulation 7, if the Authority is of the opinion that the emission from a particular motor vehicle to which that regulation applies conforms to standards as stringent as, or more stringent than, the standards referred to in that regulation and applicable to it, then for the purposes of that regulation, such vehicle shall be taken as conforming to the standards so referred to and so applicable.".

5. Vehicles to which regulation 7 does not apply

Regulation 9 is amended by repealing "Regulations 7 and 7A" and substituting "Regulation 7".

6. Vehicle design standards (emission) for certain motor vehicles registered on or after 1 April 1995

Schedule 3 is amended by repealing "[reg. 7A]" and substituting "[reg. 7]".

7. Schedules added

The following are added -

"SCHEDULE 4 [reg. 7]

VEHICLE DESIGN STANDARDS (EMISSION) FOR PRIVATE CARS

REGISTERED ON OR AFTER 1 APRIL 1998

Emission shall not exceed -

non methane organic gases	0.16 grams per kilometre
carbon monoxide	2.10 grams per kilometre
oxides of nitrogen	0.25 grams per kilometre
particulate emissions	0.05 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America.

SCHEDULE 5 [reg. 7]

VEHICLE DESIGN STANDARDS (EMISSION) FOR CERTAIN MOTOR VEHICLES REGISTERED ON OR AFTER 1 OCTOBER 1998

Part I

Emission shall not exceed -

(a)	non-methane hydrocarbons	0.16 grams per kilometre
	carbon monoxide	2.10 grams per kilometre
	oxides of nitrogen	0.25 grams per kilometre
	particulate emissions	0.05 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America;

(b)	hydrocarbons	0.25 grams per kilometre
	carbon monoxide	2.10 grams per kilometre

oxides of nitrogen 0.25 grams per kilometre

as measured by the 10.15-mode operation administered by the Ministry of Transport of Japan;

(c) (i) for a vehicle designed to carry no more than 6 passengers including the driver, or the maximum mass of which does not exceed 2 500 kg -

hydrocarbons and oxides 0.5 grams per kilometre of nitrogen combined

carbon monoxide 2.2 grams per kilometre

(ii) for a vehicle designed to carry more than 6 passengers including the driver, or the maximum mass of which exceeds 2 500 kg and the reference mass of which does not exceed 1 250 kg -

hydrocarbons and oxides 0.5 grams per kilometre of nitrogen combined

carbon monoxide 2.2 grams per kilometre

(iii) for a vehicle designed to carry more than 6 passengers including the driver, or the maximum mass of which exceeds 2 500 kg and the reference mass of which exceeds 1 250 kg and does not exceed 1 700 kg -

hydrocarbons and oxides 1.4 grams per kilometre of nitrogen combined

carbon monoxide 5.17 grams per kilometre

(iv) for a vehicle designed to carry more than 6 passengers including the driver, or the maximum mass of which exceeds 2 500 kg and the reference mass of which exceeds 1 700 kg -

hydrocarbons and oxides of nitrogen combined	1.7 grams per kilometre
carbon monoxide	6.9 grams per kilometre

as measured by the Type I test procedure specified in Council Directive 70/220/EEC as amended by Council Directive 96/69/EC, both made by the Council.

Part II

Emission shall not exceed -

(a)

hydrocarbons	0.26 grams per kilometre
carbon monoxide	2.10 grams per kilometre
oxides of nitrogen	0.63 grams per kilometre
particulate emissions	0.12 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America;

(b)

hydrocarbons	0.62 grams per kilometre
carbon monoxide	2.70 grams per kilometre
oxides of nitrogen	
- with a vehicle weight of not more than 1.265 tonnes	0.72 grams per kilometre

- with a vehicle weight of more than 1.265 tonnes — 0.84 grams per kilometre

particulate emissions — 0.34 grams per kilometre

as measured by the 10.15-mode operation administered by the Ministry of Transport of Japan;

(c) for a vehicle designed to carry no more than 6 passengers including the driver, or the maximum mass of which does not exceed 2 500 kg -

hydrocarbons and oxides of nitrogen combined — 0.97 grams per kilometre

carbon monoxide — 2.72 grams per kilometre

particulate emissions — 0.14 grams per kilometre

as measured by the Type I test procedure specified in Council Directive 70/220/EEC as amended by Council Directive 93/59/EEC, both made by the Council.

Part III

Emission shall not exceed -

(a) non-methane hydrocarbons — 0.16 grams per kilometre

carbon monoxide — 2.10 grams per kilometre

oxides of nitrogen — 0.25 grams per kilometre

particulate emissions — 0.05 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America;

(b) hydrocarbons 0.25 grams per kilometre

carbon monoxide 2.10 grams per kilometre

oxides of nitrogen 0.25 grams per kilometre

as measured by the 10.15-mode operation administered by the Ministry of Transport of Japan;

(c) (i) for a vehicle with a reference mass not more than 1 250 kg -

hydrocarbons and oxides of nitrogen combined 0.5 grams per kilometre

carbon monoxide 2.2 grams per kilometre

(ii) for a vehicle with a reference mass of more than 1 250 kg but not more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined 1.4 grams per kilometre

carbon monoxide 5.17 grams per kilometre

as measured by the Type I test procedure specified in Council Directive 70/220/EEC as amended by Council Directive 96/69/EC, both made by the Council.

Part IV

Emission shall not exceed -

(a) non-methane hydrocarbons 0.16 grams per kilometre

carbon monoxide 2.10 grams per kilometre

oxides of nitrogen 0.62 grams per kilometre

particulate emissions 0.05 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America;

(b) (i) for a vehicle with a reference mass of less than or equal to 1 250 kg -

hydrocarbons and oxides of nitrogen combined	
- for engines other than direct-injection type	0.7 grams per kilometre
- for engines of direct-injection type	0.9 grams per kilometre
carbon monoxide	1.0 grams per kilometre
particulate emissions	
- for engines other than direct-injection type	0.08 grams per kilometre
- for engines of direct-injection type	0.10 grams per kilometre

(ii) for a vehicle with a reference mass of more than 1 250 kg but not more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined	1.4 grams per kilometre
carbon monoxide	5.17 grams per kilometre
particulate emissions	0.19 grams per kilometre

as measured by the Type I test procedure specified in Council Directive 70/220/EEC as amended by Council Directive 96/69/EC, both made by the Council.

Part V

Emission shall not exceed -

(a) non-methane hydrocarbons 0.20 grams per kilometre

carbon monoxide 2.73 grams per kilometre

oxides of nitrogen 0.43 grams per kilometre

particulate emissions 0.06 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America;

(b) hydrocarbons 2.10 grams per kilometre

carbon monoxide 13.0 grams per kilometre

oxides of nitrogen 0.70 grams per kilometre

as measured by the 10.15-mode operation administered by the Ministry of Transport of Japan;

(c) (i) for a vehicle with a reference mass not more than 1 250 kg -

hydrocarbons and oxides of nitrogen combined 0.5 grams per kilometre

carbon monoxide 2.2 grams per kilometre

(ii) for a vehicle with a reference mass of more than 1 250 kg but not more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined 1.4 grams per kilometre

carbon monoxide 5.17 grams per kilometre

(iii) for a vehicle with a reference mass of more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined	1.7 grams per kilometre
carbon monoxide	6.9 grams per kilometre

as measured by the Type I test procedure specified in Council Directive 70/220/EEC as amended by Council Directive 96/69/EC, both made by the Council.

Part VI

Emission shall not exceed -

(a) non-methane hydrocarbons 0.20 grams per kilometre

carbon monoxide	2.73 grams per kilometre
oxides of nitrogen	0.60 grams per kilometre
particulate emissions	0.06 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America;

(b) (i) for a vehicle with a reference mass of not more than 1 250 kg -

hydrocarbons and oxides of nitrogen combined

- for engines other than direct-injection type	0.7 grams per kilometre
- for engines of direct-injection type	0.9 grams per kilometre

carbon monoxide 1.0 grams per kilometre

particulate emissions

- for engines other than direct-injection type 0.08 grams per kilometre

- for engines of direct-injection type 0.10 grams per kilometre

(ii) for a vehicle with a reference mass of more than 1 250 kg but not more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined 1.4 grams per kilometre

carbon monoxide 5.17 grams per kilometre

particulate emissions 0.19 grams per kilometre

(iii) for a vehicle with a reference mass of more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined 1.7 grams per kilometre

carbon monoxide 6.9 grams per kilometre

particulate emissions 0.25 grams per kilometre

as measured by the Type I test procedure specified in Council Directive 70/220/EEC as amended by Council Directive 96/69/EC, both made by the Council.

Part VII

Emission shall not exceed -

(a) non-methane hydrocarbons 0.24 grams per kilometre

carbon monoxide 3.10 grams per kilometre

oxides of nitrogen 0.68 grams per kilometre

particulate emissions 0.08 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America;

(b) hydrocarbons 6.20 grams per kilowatt-hour

carbon monoxide 102 grams per kilowatt-hour

oxides of nitrogen 5.50 grams per kilowatt-hour

as measured by the 13-mode operation for heavy duty petrol-powered motor vehicles administered by the Ministry of Transport of Japan;

(c) (i) for a vehicle with a reference mass not more than 1 250 kg -

hydrocarbons and oxides of nitrogen combined 0.5 grams per kilometre

carbon monoxide 2.2 grams per kilometre

(ii) for a vehicle with a reference mass of more than 1 250 kg but not more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined 1.4 grams per kilometre

carbon monoxide 5.17 grams per kilometre

(iii) for a vehicle with a reference mass of more than 1 700 kg -

hydrocarbons and oxides 1.7 grams per kilometre

of nitrogen combined

carbon monoxide 6.9 grams per kilometre

as measured by the Type I test procedure specified in Council Directive 70/220/EEC as amended by Council Directive 96/69/EC, both made by the Council.

Part VIII

Emission shall not exceed -

(a) non-methane hydrocarbons 0.24 grams per kilometre

carbon monoxide 3.10 grams per kilometre

oxides of nitrogen 0.95 grams per kilometre

particulate emissions 0.08 grams per kilometre

as measured by the 1975 Federal Test Procedure administered by the Environmental Protection Agency of the United States of America;

(b) (i) for a vehicle with a reference mass of less than or equal to 1 250 kg -

hydrocarbons and oxides of nitrogen combined

- for engines other than direct-injection type 0.7 grams per kilometre

- for engines of direct-injection type 0.9 grams per kilometre

carbon monoxide 1.0 grams per kilometre

particulate emissions

- for engines other 0.08 grams per kilometre

than direct-injection type

- for engines of direct-injection type 0.10 grams per kilometre

(ii) for a vehicle with a reference mass of more than 1 250 kg but not more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined 1.4 grams per kilometre

carbon monoxide 5.17 grams per kilometre

particulate emissions 0.19 grams per kilometre

(iii) for a vehicle with a reference mass of more than 1 700 kg -

hydrocarbons and oxides of nitrogen combined 1.7 grams per kilometre

carbon monoxide 6.9 grams per kilometre

particulate emissions 0.25 grams per kilometre

as measured by the Type I test procedure specified in Council Directive 70/220/EEC as amended by Council Directive 96/69/EC, both made by the Council.

Part IX

Emission shall not exceed -

(a) hydrocarbons 2.55 grams per kilowatt-hour

carbon monoxide 49.7 grams per kilowatt-hour

oxides of nitrogen 5.36 grams per kilowatt-hour

as measured by the Transient Test Procedure for heavy duty Otto cycle engines administered by the Environmental Protection Agency of the United States of America;

(b) hydrocarbons 6.20 grams per kilowatt-hour
carbon monoxide 102 grams per kilowatt-hour
oxides of nitrogen 5.50 grams per kilowatt-hour
as measured by the 13-mode operation for heavy duty petrol-powered motor vehicles administered by the Ministry of Transport of Japan.

Part X

Emission shall not exceed -

(a) hydrocarbons 1.74 grams per kilowatt-hour
carbon monoxide 20.8 grams per kilowatt-hour
oxides of nitrogen 5.36 grams per kilowatt-hour
particulate emissions 0.13 grams per kilowatt-hour
as measured by the Transient Test Procedure for heavy duty diesel engines administered by the Environmental Protection Agency of the United States of America;

(b) hydrocarbons 1.1 grams per kilowatt-hour
carbon monoxide 4.0 grams per kilowatt-hour
oxides of nitrogen 7.0 grams per kilowatt-hour
particulate emissions
- for engines having a 0.25 grams per kilowatt-hour

swept volume per cylinder of less than 700 cubic centimetres and rated power speed of engine higher than 3 000 revolutions per minutes	
- for engines having a swept volume per cylinder equal to or more than 700 cubic centimetres, or rated power speed of engine less than or equal to 3 000 revolutions per minutes	0.15 grams per kilowatt-hour

as measured by the test procedure for diesel engines which are for use in vehicles specified in Council Directive 88/77/EEC as amended by Council Directive 91/542/EEC, both made by the Council.".

Secretary for Planning,
Environment and Lands

1998

Explanatory Note

This Regulation amends the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations (Cap. 311 sub. leg.) by -

(a) imposing a more stringent vehicle design standard for emission of air pollutants for private cars equipped with a compression-ignition engine and first registered on or after 1 April 1998; and

(b) imposing more stringent vehicle design standards for emission of air pollutants applicable to certain motor vehicles first registered on or after 1 October 1998.