

# THE GOVERNMENT OF THE REPUBLIC OF CROATIA

3047

Pursuant to Article 24, paragraph 5 of the Environmental Protection Act (Official Gazette 82/94 and 128/99), the Government of the Republic of Croatia, at its session on 7 December 2006, adopted the following

## REGULATION

### ON TECHNICAL ENVIRONMENTAL STANDARDS FOR VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS RESULTING FROM THE STORAGE AND DISTRIBUTION OF PETROL

#### GENERAL PROVISIONS

##### Article 1

This Regulation prescribes the technical environmental standards for petrol storage and loading installations at terminals and service stations and for mobile containers used for the transfer of petrol from one terminal to another or from a terminal to a service station, and the deadlines for their achievement.

##### Article 2

The technical environmental standards referred to in Article 1 of this Regulation ensure the reduction of air pollution by emissions of volatile organic compounds and achievement of target values of the total annual loss of petrol at terminals, service stations and mobile containers.

##### Article 3

For the purpose of this Regulation:

1. Petrol means any petroleum derivative, with or without additives, having a Reid vapour pressure of 27.6 kilopascals or more, which is intended for use as a fuel for motor vehicles, except liquefied petroleum gas (LPG);
2. Vapours means any gaseous compound which evaporates from petrol;
3. Terminal means any facility which is used for the storage and loading of petrol onto road tankers, rail tankers, or vessels, including all storage installations on the site of the facility;
4. Storage installation means any stationary tank at a terminal used for the storage of petrol;

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5. Mobile container means any tank, transported by road, rail or waterways used for the transfer of petrol from one terminal to another or from a terminal to a service station;
6. Service station means any installation where petrol is dispensed to motor vehicle fuel tanks from stationary storage tanks;
7. Throughput means the largest total annual quantity of petrol loaded from a storage installation at a terminal or from a service station into mobile containers during the three preceding years;
8. Vapour-recovery unit means equipment for the recovery of petrol from vapours including any buffer reservoir systems at a terminal;
9. Target reference value means the guideline given for the overall assessment of the adequacy of technical measures in the Annexes and is not a limit value against which the performance of individual installations, terminals and service stations will be measured;
10. Existing petrol storage installations, loading installations, service stations and mobile containers means such installations, service stations and mobile containers which were in operation or for which an operating licence was granted before the day this Regulation entered into force;
11. New petrol storage installations, loading installations, service stations and mobile containers means such installations, service stations and mobile containers which will be in operation or for which an operating licence is granted upon the entry into force of this Regulation;
12. Intermediate storage of vapours means the intermediate storage of vapours in a fixed roof tank at a terminal for later transfer to and recovery at another terminal. The transfer of vapours from one storage installation to another at a terminal shall not be considered as intermediate storage of vapour within the meaning of this Regulation;
13. Loading installation means any facility at a terminal at which petrol can be loaded onto mobile containers, and comprising one or more gantries;
14. Gantry means any structure at a terminal at which petrol can be loaded on to a road tanker. Petrol may be loaded only on to a single road tanker at any one time;
15. Vessel means an inland waterway vessel particularly intended for use on an inland waterway, defined as follows:
  - having a total dead weight of 15 tonnes or more,
  - not intended for transport of cargo with a volume of 15 m<sup>3</sup> or more,
  - tugs or pusher craft including those with a volume of less than 15 m<sup>3</sup>, designed to tow, push or move alongside vessels,
  - including all vessels holding:
    - (a) an inland navigation certificate, as defined by the Inland Waterway Navigation Act,

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(b) a certificate issued pursuant to Article 22 of the Revised Convention for the Navigation of the Rhine. Not included: passenger ships, ferries, recreational craft, service craft belonging to supervisory authorities, fire-service vessels, warships, sea-going tugs and pusher craft with a volume of less than 15 m<sup>3</sup> designed to tow, push or move alongside vessels with a volume of less than 15 m<sup>3</sup>, sailing objects, equipment or installations.

### PETROL STORAGE INSTALLATIONS AT TERMINALS

#### Article 4

Storage installations at terminals shall be designed and operated in accordance with the technical environmental standards designed to reduce the total annual loss of petrol resulting from loading and storage at each storage installation at terminals to below the target reference value of 0.01 weight by weight (w/w) % of the throughput.

#### Article 5

(1) Technical environmental standards referred to in Article 4 of this Regulation prescribe the following conditions:

1. The external wall and roof of tanks above ground must be painted in a colour with a total radiant heat reflectance of 70 % or more.

2. Tanks with external floating roofs must be equipped with double seals. The primary seal shall cover the annular space between the tank wall and the outer periphery of the floating roof and the secondary seal shall be fitted above the primary seal. The seals should be designed to achieve an overall containment of vapours of 95 % or more as compared to a comparable fixed-roof tank with a vacuum/pressure relief valve and no vapour-containment controls.

3. New storage installations at terminals, where vapour recovery is required (according to the technical environmental protection requirements for loading and unloading installations at terminals laid down in Articles 7 to 10 of this Regulation) must be either:

- designed with a floating roof, either external or internal, equipped with primary and secondary seals to achieve an overall containment of vapours of 95 % or more as compared to a comparable fixed-roof tank with no vapour-containment control (that is a fixed-roof tank with only vacuum/pressure relief valve); or

- fixed-roof tanks connected to the vapour recovery unit in conformity with the requirements for loading and unloading installations at terminals.

4. Existing fixed-roof tanks must either:

- be connected to a vapour-recovery unit in conformity with the requirements for loading and unloading installations at terminals; or

- have an internal floating roof with a primary seal which should be designed to achieve an overall containment of vapours of 90 % or more in relation to a comparable fixed-roof tank with no vapour controls.

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(2) The quality of the paint layer on petrol storage installations mentioned under paragraph 1 item 1 of this Article shall be inspected once every three years.

(3) The requirements mentioned under paragraph 1 item 3 indent 2 and item 4 of this Article do not apply to fixed-roof tanks at terminals, where intermediate storage of vapours is permitted.

(4) The requirements mentioned under paragraph 1 item 1 and paragraph 2 of this Article do not apply to tanks connected to a vapour-recovery unit in conformity with the technical requirements of Article 7 items 2 and 3 of this Regulation.

### EQUIPMENT FOR MOBILE CONTAINERS AT TERMINALS

#### Article 6

Equipment for loading and unloading of mobile containers at terminals shall be designed and operated in accordance with the technical environmental standards designed to reduce the total annual loss of petrol resulting from loading and unloading of mobile containers at terminals to below the target reference value of 0,005 w/w % of the throughput.

#### Article 7

(1) Technical environmental standards mentioned under Article 6 of this Regulation prescribe the following conditions:

1. Displacement vapours from the mobile container being loaded must be collected and returned through a vapour-tight connection line to a vapour recovery unit for regeneration at the terminal.

2. The mean concentration of vapours in the exhaust from the vapour recovery unit must not exceed 35 g/ m<sup>3</sup> for any one hour at a temperature of 20 °C and a pressure of 101.3 kPa.

3. The measurements must be made:

- over the course of one full working day (seven hours minimum) of normal throughput,
- measurements may be continuous or discontinuous,
- if discontinuous measurements are employed, at least four measurements per hour must be made,
- the overall measurement error due to the equipment used, the calibration gas and the procedure used must not exceed 10 % of the measured value,
- the equipment used must be capable of measuring concentrations at least as low as 3 g/Nm<sup>3</sup>,
- the precision must be at least 95 % of the measured value.

4. Loading operations must be shut down at the gantry in the case of a leak of vapour. Equipment for such shutdown operations must be installed at the gantry.

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(2) Measurements referred to in paragraph 1 item 3 of this Article shall be made at least once every year.

(3) The connection lines and pipe installations at terminals must be checked regularly for leaks.

### Article 8

(1) Terminals with loading facilities for road tankers shall be equipped with at least one gantry which meets the requirements of technical environmental standards for bottom-loading equipment laid down in Annex I to this Regulation.

(2) Road tanker loading gantries at terminals shall be equipped according to the requirements of technical environmental standards for bottom-loading equipment laid down in Annex I to this Regulation.

(3) The requirements referred to in paragraph 1 of this Article applying to road tankers shall also apply to rail tankers and vessels.

### Article 9

(1) If vapour recovery is unsafe or technically impossible because of the volume of return vapour, a vapour incineration unit may be substituted for a vapour recovery unit at terminals which load petrol onto vessels.

(2) The requirements concerning atmospheric emissions from the vapour recovery unit referred to in Article 7 paragraphs 2 and 3 of this Regulation shall also apply to the vapour incineration unit referred to in paragraph 1 of this Article.

(3) In case the mobile container is used for products other than petrol after unloading, and intermediate storage of vapours or vapour recovery cannot be performed, vapours may be emitted into the environment from the mobile container in a location where the vapours cannot cause harm to the environment or human health.

### Article 10

At terminals with a throughput of less than 25 000 tonnes/year, intermediate storage of vapours may be substituted for immediate vapour recovery at the terminal.

### Article 11

4. By way of derogation, the provisions of Article 8 paragraph 2 and Article 9 paragraphs 1 and 2 shall not apply:

- to existing terminals with a throughput of less than 10 000 tonnes/year and;
- to new terminals with a throughput of less than 5 000 tonnes/year located in small remote islands, according to Article 2 paragraph 2 of the Islands Act.

## MOBILE CONTAINERS

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### Article 12

(1) Mobile containers shall be designed in accordance with the requirements of technical environmental standards:

- residual vapours must be retained in the container after unloading of petrol;
- mobile containers which supply petrol to service stations and terminals shall be designed and operated so as to accept and retain return vapours from the storage installations at the service stations or terminals;
- except for release through the pressure relief valves, the vapours mentioned in indents 1 and 2 shall be retained in the mobile container until reloading takes place at a terminal.

(2) Paragraph 1 indent 2 of this Article shall also apply for rail tankers if they supply petrol to service stations or to terminals where intermediate storage of vapours is used.

(3) Technical standards referred to in paragraph 1 of this Article shall also apply for existing road tankers when retrofitted for bottom loading in accordance with the specifications laid down in Annex I to this Regulation.

### Article 13

The correct functioning of safety valves and vapour tightness of mobile containers must be inspected during regular testing of mobile containers used for petrol transport under the Act on the Transport of Hazardous Substances.

### Article 14

Technical environmental standards to reduce the losses of vapours at mobile containers referred to in Article 12 of this Regulation shall apply to road tankers and vessels if loaded at a terminal to which the requirement of Articles 7 and 8 apply, and to road tankers when retrofitted for bottom loading in accordance with the specifications laid down in Annex I to this Regulation.

### Article 15

If top-loading of mobile containers is permissible, the outlet of the loading arm must be kept near the bottom of the mobile container, in order to avoid splash loading.

### Article 16

The provisions of Article 12 paragraph 1 indents 1, 2 and 3 and paragraph 2 of this Regulation shall not apply to mobile containers where losses of vapours result from measuring operations using a dipstick.

## STORAGE INSTALLATIONS AT SERVICE STATIONS

### Article 17

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Loading and storage installations and equipment at service stations shall be designed and operated in accordance with the technical environmental standards in order to reduce the total annual loss of petrol resulting from loading into storage installations at service stations to below the target reference value of 0.01 w/w % of the throughput.

### Article 18

Technical environmental standards referred to in Article 17 of this Regulation prescribe the following conditions:

- vapours displaced by the delivery of petrol into storage installations at service stations must be returned through a connection line to the mobile container;
- the connection line must be vapour-tight;
- loading operations at service stations may not take place unless all required equipment is functioning properly and reliably.

### Article 19

The provision of Article 18 of this Regulation shall not apply to service stations with an annual throughput of less than 100 m<sup>3</sup>.

## REPORTING

### Article 20

- (1) The Croatian Environment Agency (hereinafter referred to as: the CEA) shall maintain files on the type and number of petrol storage installations at terminals, and the number of service stations.
- (2) The data referred to in paragraph 1 of this Article for new terminals and service stations shall be communicated to the CEA after the operating licence has been granted.
- (3) The data referred to in paragraph 1 of this Article for existing terminals and service stations shall be communicated to the CEA by 31 March 2007.
- (4) The data referred to in paragraph 1 of this Article shall be communicated using the KTB1 form.

### Article 21

The data on measurements under Article 7 paragraphs 2 and 3 of this Regulation shall be delivered in accordance with the Ordinance on monitoring pollutant emissions from stationary sources into the air.

## TRANSITIONAL AND FINAL PROVISIONS

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## Article 22

The requirements for technical environmental standards:

- under Article 5 paragraph 1 items 1, 2 and 4 and paragraphs 2, 3 and 4 of this Regulation for existing petrol storage installations at terminals,
- under Article 7 of this Regulation for existing equipment for the loading and unloading of mobile containers with petrol at terminals,
- under Article 8 paragraph 2 of this Regulation for road tanker loading gantries at terminals,
- under Article 8 paragraph 3 of this Regulation for existing rail tanker and vessel loading gantries at terminals,
- under Article 12 of this Regulation for existing mobile containers, and
- under Article 18 of this Regulation for existing service stations

must be fulfilled by 31 December 2012.

## Article 23

The plan for adaptation of existing terminals and service stations to the technical environmental standards prescribed by this Regulation shall be delivered to the Ministry of Environmental Protection, Physical Planning and Construction by 30 September 2007.

## Article 24

Annex 1 and the KTB1 form with their respective contents shall be printed along with this Regulation and shall constitute an integral part thereof.

## Article 25

This Decision shall enter into force on the eighth day after the day of its publication in the Official Gazette.

Class: 351-01/06-01/06  
Reg. No: 5030114-06-1  
Zagreb, 7 December 2006

Prime Minister  
**Ivo Sanader**, m.p.

## ANNEX 1.

### SPECIFICATIONS FOR BOTTOM-LOADING, VAPOUR COLLECTION AND OVERFILL PROTECTION OF ROAD TANKERS

### *1. Couplings*

1.1. The liquid coupler on the loading arm must be a female coupler which must mate with a 4-inch API (101.6 mm) male adapter located on the vehicle as defined by:

Bottom loading and vapour recovery for MC-306 tank motor vehicles (API Recommended Practice 1004 Seventh Edition, November 1988, Section 2.1.1.1)

1.2. The vapour-collection coupler on the loading-gantry vapour-collection hose must be a cam-and-groove female coupler. The coupler must mate with a 3- or 4-inch (76.1 mm or 101.6 mm) cam-and-groove male adapter located on the vehicle as defined by:

Bottom loading and vapour recovery for MC-306 tank motor vehicles (API Recommended Practice 1004 Seventh Edition, November 1988, Section 2.1.1.2)

### *2. Tank vehicle loading conditions*

2.1. The normal liquid-loading rate must be 2 300 litres per minute (maximum 2 500 litres per minute) per loading arm.

2.2. When the terminal is operating at peak demand, its loading gantry vapour collection system, including the vapour-recovery unit, is allowed to generate a maximum counter pressure of 55 millibar, measured on the vehicle side of the vapour-collection adapter.

2.3. All approved bottom-loading vehicles must carry an identification plate which specifies the maximum permitted number of loading arms which may be operated simultaneously whilst ensuring that the plant back pressure is within the limits laid down in item 2.2, and does not exceed 55 millibar which may cause the opening of safety valves.

### *3. Connection of vehicle earth/overflow detection*

3.1. The loading gantry must be equipped with an overflow-detection control unit which, when connected to the vehicle, must provide a fail-safe permission signal to enable loading.

3.2. The vehicle must be connected to the control unit on the gantry via a 10-pin industry-standard electrical connector. The male connector must be mounted on the vehicle and the female connector must be attached to a flying lead connected to the gantry-mounted control unit.

3.3. The high-level detectors on the vehicle must be either 2-wire thermistor sensors, 2-wire optical sensors, 5-wire optical sensors or a compatible equivalent. (Note: thermistors must have a negative temperature coefficient.) The system must be fail-safe.

3.4. The gantry control unit must be suitable for both 2-wire and 5-wire vehicle systems.

3.5. The vehicle must be bonded to the gantry via the common return wire of the overflow sensors, which must be connected to pin 10 on the male connector via the vehicle chassis. Pin 10 on the female connector must be connected to the control-unit enclosure which must be connected to the gantry earth.

3.6. All approved bottom-loading vehicles must carry an identification plate (see 2.3) which specifies the type of overfill-detection sensors installed (i. e. 2-wire or 5-wire).

#### *4. Location of the connections*

4.1. Liquid-loading and vapour collection facilities on the loading gantry must be designed on the basis of the following general provisions for tank vehicle connection.

4.1.1. The height of the centre line of the liquid adapters must be: maximum 1.4 metres (unladen); minimum 0.5 metre (laden). The preferred height shall be 0.7 to 1.0 metres.

4.1.2. The horizontal spacing of the adapters must be not less than 0.25 metres (preferred minimum spacing is 0.3 metres).

4.1.3. All liquid adapters must be located within an envelope not exceeding 2.5 metres in length.

4.1.4. The vapour-collection adapter should be located preferably to the right of the liquid adapters and at a height not exceeding 1.5 metres (unladen) and not less than 0.5 metres (laden).

4.2. The earth/overfill connector must be located to the right of the liquid and vapour-collection adapters and at a height not exceeding 1.5 metres (unladen) and not less than 0.5 metre (laden).

4.3. The above connections must be located on one side of the vehicle only.

#### *5. Safety interlocks*

##### *5.1. Earth/Overfill detection*

Loading must not be permitted unless a permissive signal is provided by the combined earth/overfill control unit.

In the event of an overfill condition or a loss of vehicle earth, the control unit on the gantry must close the gantry-loading control valve.

##### *5.2. Vapour-collection detection*

Loading must not be permitted unless the vapour-collection hose has been connected to the vehicle and there is a free passage for the displaced vapours to flow from the vehicle into the vapour-recovery unit.

FORM KTB 1

Data on storage installations at terminals and service stations where the storage and loading of petrol is carried out

MINISTRY OF FOREIGN AFFAIRS AND EUROPEAN INTEGRATION

File number: *	
File entry date:*	

Terminal/service station name:	
Terminal/service station owner:	
Terminal/service station user:	
Terminal/service station head office (address, phone/fax):	
Registration number:	
Name and surname of responsible person:	
Terminal/service station average annual throughput during the three preceding years (tonnes):	
Storage and loading installations at the terminal/service station are designed and operated in accordance with the provisions of this Regulation:	
	– ≤ yes
	≤ – no

\*To be entered by the Croatian Environment Agency.

Place and date:

(L.S.)

Data entered by:

\_\_\_\_\_