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► **B** **EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVE 94/63/EC**
of 20 December 1994
on the control of volatile organic compound (VOC) emissions resulting from the storage of petrol
and its distribution from terminals to service stations
(OJ L 365, 31.12.1994, p. 24)

Amended by:

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► <u>M1</u>	Regulation (EC) No 1882/2003 of the European Parliament and of the Council of 29 September 2003	L 284	1	31.10.2003
► <u>M2</u>	Regulation (EC) No 1137/2008 of the European Parliament and of the Council of 22 October 2008	L 311	1	21.11.2008
► <u>M3</u>	Decision (EU) 2018/853 of the European Parliament and of the Council of 30 May 2018	L 150	155	14.6.2018



**EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVE
94/63/EC**

of 20 December 1994

**on the control of volatile organic compound (VOC) emissions
resulting from the storage of petrol and its distribution from
terminals to service stations**

Article 1

Scope

This Directive shall apply to the operations, installations, vehicles and vessels used for storage, loading and transport of petrol from one terminal to another or from a terminal to a service station.

Article 2

Definitions

For the purpose of this Directive:

- (a) 'petrol' shall mean 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);
- (b) 'vapours' shall mean any gaseous compound which evaporates from petrol;
- (c) 'storage installation' shall mean any stationary tank at a terminal used for the storage of petrol;
- (d) 'terminal' shall mean 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;
- (e) 'mobile container' shall mean 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;
- (f) 'service station' shall mean any installation where petrol is dispensed to motor vehicle fuel tanks from stationary storage tanks;
- (g) 'existing' petrol storage installations, loading installations, service stations and mobile containers shall mean such installations, service stations and mobile containers which were in operation before the date referred to in Article 10 or for which an individual construction licence or operating licence, where required under national legislation, was granted before the date referred to in Article 10;

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- (h) ‘new’ in relation to petrol storage installations, loading installations, service stations and mobile containers shall mean such installations, service stations and mobile containers which are not covered by paragraph (g);
- (i) ‘throughput’ shall mean 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;
- (j) ‘vapour-recovery unit’ shall mean equipment for the recovery of petrol from vapours including any buffer reservoir systems at a terminal;
- (k) ‘vessel’ shall mean an inland waterway vessel as defined in Chapter 1 of Council Directive 82/714/EEC of 4 October 1982 laying down technical requirements for inland waterway vessels ⁽¹⁾;
- (l) ‘target reference value’ shall mean 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;
- (m) ‘intermediate storage of vapours’ shall mean 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 Directive;
- (n) ‘loading installation’ shall mean any facility at a terminal at which petrol can be loaded onto mobile containers. Loading installations for road tankers comprise one or more ‘gantries’;
- (o) ‘gantry’ shall mean any structure at a terminal at which petrol can be loaded on to a single road tanker at any one time.

*Article 3***Storage installations at terminals**

1. Storage installations shall be designed and operated in accordance with the technical provisions of Annex I.

These provisions are 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.

Member States may maintain or require more stringent measures throughout their territory or in geographical areas where it is established that such measures are necessary for the protection of human health or the environment owing to specific conditions.

⁽¹⁾ OJ No L 301, 28.10.1982, p. 1.

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Member States may adopt technical measures for the reduction of losses of petrol other than those set down in Annex I if such alternative measures are demonstrated to have at least the same efficiency.

Member States shall inform the other Member States and the Commission of any existing measures or of any special measures referred to in this paragraph which they contemplate taking and of their grounds for taking them.

2. The provisions of paragraph 1 shall apply:
 - (a) from the date referred to in Article 10 for new installations;
 - (b) three years from the date referred to in Article 10 for existing installations if the throughput loaded at a terminal is greater than 50 000 tonnes/year;
 - (c) six years from the date referred to in Article 10 for existing installations if the throughput loaded at a terminal is greater than 25 000 tonnes/year;
 - (d) nine years from the date referred to in Article 10 for all other existing storage installations at terminals.

*Article 4***Loading and unloading of mobile containers at terminals**

1. Loading and unloading equipment shall be designed and operated in accordance with the technical provisions of Annex II.

These provisions are 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.

Member States may maintain or require more stringent measures throughout their territory or in geographical areas where it is established that such measures are necessary for the protection of human health or the environment owing to specific conditions.

Member States may adopt technical measures for the reduction of losses of petrol other than those set down in Annex II if such alternative measures are demonstrated to have at least the same efficiency.

Member States shall inform the other Member States and the Commission of any existing measures or of any special measures referred to in this paragraph which they contemplate taking and of their grounds for taking them. The Commission shall verify the compatibility of these measures with the provisions of the Treaty and those of this paragraph.

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All terminals with loading facilities for road tankers shall be equipped with at least one gantry which meets the specifications for bottom loading equipment laid down in Annex IV. The Commission shall re-examine those specifications at regular intervals and, if appropriate, revise them. Those measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 8(2).

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2. The provisions of paragraph 1 shall apply:
 - (a) from the date referred to in Article 10 for new terminals for loading onto road tankers, rail tankers and/or vessels;
 - (b) three years from the date referred to in Article 10 for existing terminals for loading onto road tankers, rail tankers and/or vessels if the throughput is greater than 150 000 tonnes/year;
 - (c) six years from the date referred to in Article 10 for existing terminals for loading onto road tankers and rail tankers if the throughput is greater than 25 000 tonnes/year;
 - (d) nine years from the date referred to in Article 10 for all other existing loading installations at terminals for loading onto road tankers and rail tankers.
3. Nine years after the date referred to in Article 10 the requirements for bottom-loading equipment set in Annex IV shall apply to all road tanker loading gantries at all terminals unless exempted under the terms of paragraph 4.
4. By way of derogation, paragraphs 1 and 3 shall not apply:
 - (a) to existing terminals with a throughput of less than 10 000 tonnes/year and;
 - (b) to new terminals with a throughput of less than 5 000 tonnes/year located in small remote islands.

▼ M3

Member States shall inform the Commission of terminals concerned by such a derogation.

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5. The Kingdom of Spain may grant a derogation of one year from the time limit set down in paragraph 2 (b).

*Article 5***Mobile containers**

1. Mobile containers shall be designed and operated in accordance with the following requirements:

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- (a) mobile containers shall be designed and operated so that residual vapours are retained in the container after unloading of petrol;
- (b) 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. For rail tankers this is only required if they supply petrol to service stations or to terminals where intermediate storage of vapours is used;
- (c) except for release through the pressure relief valves, the vapours mentioned in subparagraphs (a) and (b) shall be retained in the mobile container until reloading takes place at a terminal.

If after the unloading of petrol the mobile container is subsequently used for products other than petrol, in so far as vapour recovery or intermediate storage of vapours is not possible, ventilation may be permitted in a geographical area where emissions are unlikely to contribute significantly to environmental or health problems;

- (d) the Member States' competent authorities must ensure that road tankers are regularly tested for vapour tightness and that vacuum/pressure valves on all mobile containers are periodically inspected for correct functioning.

2. The provisions of paragraph 1 shall apply:

- (a) from the date referred to in Article 10 for new road tankers, rail tankers and vessels;
- (b) three years from the date referred to in Article 10 for existing rail tankers and vessels if loaded at a terminal to which the requirement of Article 4 (1) applies;
- (c) for existing road tankers when retrofitted for bottom loading in accordance with the specifications laid down in Annex IV.

3. By way of derogation, the provisions of paragraph 1, subparagraphs (a), (b) and (c) shall not apply to losses of vapours resulting from measuring operations using dipsticks in relation to:

- (a) existing mobile containers; and
- (b) new mobile containers which come into operation during the four years following the date referred to in Article 10.

Article 6

Loading into storage installations at service stations

1. Loding and storage equipment shall be designed and operated in accordance with the technical provisions of Annex III.

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These provisions are designed 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.

Member States may maintain or require more stringent measures throughout their territory or in geographical areas where it is established that such measures are necessary for the protection of human health or the environment owing to specific conditions.

Member States may adopt technical measures for the reduction of losses of petrol other than those set down in Annex III if such alternative measures are demonstrated to have at least the same efficiency.

Member States shall inform the other Member States and the Commission of any existing measures or of any special measures referred to in this paragraph which they contemplate taking and of their grounds for taking them.

2. The provisions of paragraph 1 shall apply:

(a) from the date referred to in Article 10 for new service stations;

(b) three years from the date referred to in Article 10:

— for existing service stations with a throughput greater than 1 000 m³/year,

— for existing service stations, regardless of their throughput, which are located under permanent living quarters or working areas;

(c) six years from the date referred to in Article 10 for existing service stations with a throughput greater than 500 m³/year;

(d) nine years from the date referred to in Article 10 for all other existing service stations.

3. By way of derogation, paragraphs 1 and 2 shall not apply to service stations with a throughput of less than 100 m³/year.

4. For service stations with an annual throughput of less than 500 m³/year, Member States may grant a derogation from the requirements of paragraph 1 where the service station is located in a geographical area or on a site where vapour emissions are unlikely to contribute significantly to environmental or health problems.

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Member States shall inform the Commission of the details of the areas within which they intend to grant such derogation and subsequently of any changes to such areas.

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5. The Kingdom of the Netherlands may grant a derogation from the timetable set down in paragraph 2, subject to the following conditions:

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- the measures required by this Article are implemented as part of a broader, existing national programme for service stations which simultaneously addresses various environmental problems, such as water pollution, air pollution, ground pollution and waste pollution and the implementation of which is tightly scheduled,
- the timetable may only be varied by a maximum of two years, all programmes being completed within the time limit set out in paragraph 2 (d),
- the Commission shall be notified of the decision to diverge from the timetable set down in paragraph 2, including full information on the scope and deadline of the derogation.

6. The Kingdom of Spain and the Portuguese Republic may grant a derogation of one year from the time limit set down in paragraph 2 (b).

▼ M2*Article 7***Adaptation to technical progress**

Except for the limit values laid down in point 2 of Annex II, the Commission may adapt the Annexes to this Directive to technical progress. Those measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 8(2).

▼ M1*Article 8***The committee**

1. The Commission shall be assisted by a committee.

▼ M2

2. Where reference is made to this paragraph, Article 5a(1) to (4) and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

▼ M3*Article 9***Monitoring and reporting**

The Commission is invited to submit with its reports, where appropriate, proposals for the amendment of this Directive, including in particular the extension of the scope to include vapour control and recovery systems for loading installations and ships.

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Article 10

Transposition into national legislation

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 1995. They shall forthwith inform the Commission thereof.

When these measures are adopted by Member States, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such a reference shall be laid down by the Member States.

2. Member States shall communicate to the Commission the texts of the provisions of national law which they adopt in the field governed by this Directive.

Article 11

Final provision

This Directive is addressed to the Member States.

*ANNEX I***REQUIREMENTS FOR STORAGE INSTALLATIONS AT TERMINALS**

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. These operations may be programmed so as to be carried out as part of the usual maintenance cycles of the tanks within a period of three years. Member States may grant a derogation from this provision where required for the protection of special landscape areas which have been designated by national authority.

This provision shall not apply to tanks linked to a vapour recovery unit which conforms with the requirements set out in Annex II, point 2.

2. Tanks with external floating roofs must be equipped with a primary seal to cover the annular space between the tank wall and the outer periphery of the floating roof and with a secondary seal 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 no vapour-containment controls (that is a fixed-roof tank with only vacuum/pressure relief valve).
3. All new storage installations at terminals, where vapour recovery is required according to Article 4 of the Directive (see Annex II) must be either:
 - (a) fixed-roof tanks connected to the vapour recovery unit in conformity with the requirements of Annex II; or
 - (b) designed with a floating roof, either external or internal, equipped with primary and secondary seals to meet the performance requirements set down in point 2.
4. Existing fixed-roof tanks must either:
 - (a) be connected to a vapour-recovery unit in conformity with the requirements of Annex II; or
 - (b) 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.
5. The requirements for vapour-containment controls mentioned under points 3 and 4 do not apply to fixed-roof tanks at terminals, where intermediate storage of vapours is permitted according to Annex II, point 1.

▼B*ANNEX II***REQUIREMENTS FOR LOADING AND UNLOADING
INSTALLATIONS AT TERMINALS**

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

This provision does not apply to top-loading tankers as long as that loading system is permitted.

At terminals which load petrol onto vessels, a vapour incineration unit may be substituted for a vapour recovery unit if vapour recovery is unsafe or technically impossible because of the volume of return vapour. The requirements concerning atmospheric emissions from the vapour recovery unit shall also apply to the vapour incineration unit.

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.

2. The mean concentration of vapours in the exhaust from the vapour recovery — unit corrected for dilution during treatment — must not exceed 35 g/normal cubic metre (Nm³) for any one hour.

For vapour recovery units, installed before 1 January 1993, the United Kingdom may grant a derogation from the limit value of 35 g/Nm³ for any one hour, set down in this Annex, subject to the following conditions:

- the installation shall meet a limit value of 50 g/Nm³ for any one hour measured according to the specifications set down in this Annex,
- the derogation shall expire at the latest nine years from the date referred to in Article 10 of the Directive,
- the Commission shall be notified of the individual installations affected by this derogation including information on their throughput of petrol and vapour emissions from the installation.

The Member States' competent authorities must ensure that the measurement and analysis methods and their frequency are established.

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/Nm³.

The precision must be at least 95 % of the measured value.

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3. The Member States' competent authorities must ensure that the connection lines and pipe installations are checked regularly for leaks.
4. The Member States' competent authorities must ensure that loading operations are shut down at the gantry in the case of a leak of vapour. Equipment for such shutdown operations must be installed at the gantry.
5. Where 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.

▼B*ANNEX III***REQUIREMENTS FOR LOADING AND STORAGE INSTALLATIONS
AT SERVICE STATIONS AND TERMINALS WHERE THE
INTERMEDIATE STORAGE OF VAPOURS IS CARRIED OUT**

Vapours displaced by the delivery of petrol into storage installations at service stations and in fixed-roof tanks used for the intermediate storage of vapours must be returned through a vapour-tight connection line to the mobile container delivering the petrol. Loading operations may not take place unless the arrangements are in place and properly functioning.

*ANNEX IV***SPECIFICATIONS FOR BOTTOM-LOADING, VAPOUR COLLECTION AND OVERFILL PROTECTION OF EUROPEAN 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:

— API Recommended Practice 1004
Seventh Edition, November 1988.

Bottom loading and vapour recovery for MC-306 tank motor vehicles
(Section 2.1.1.1 — Type of adapter used for bottom loading)

- 1.2. The vapour-collection coupler on the loading-gantry vapour-collection hose must be a cam-and-groove female coupler which must mate with a 4-inch (101,6 mm) cam-and-groove male adapter located on the vehicle as defined by:

— API Recommended Practice 1004
Seventh Edition November 1988.

Bottom loading and vapour recovery for MC-306 tank motor vehicles
(Section 4.1.1.2 — Vapour-recovery adapter)

2. 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 counterpressure of 55 millibar on the vehicle side of the vapour-collection adapter.
- 2.3. All approved bottom-loading vehicles will carry an identification plate which specified the maximum permitted number of loading arms which may be operated simultaneously whilst ensuring that no vapours are released via the compartment P and V valves, when the maximum plant back pressure is 55 millibar as specified in 2.2.

3. Connection of vehicle earth/overflow detection

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, providing no compartment-overflow sensors detect a high level.

- 3.1. 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.
- 3.2. 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, provided the system is fail-safe. (NB: thermistors must have a negative temperature coefficient.)

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- 3.3. The gantry control unit must be suitable for both 2-wire and 5-wire vehicle systems.
- 3.4. The vehicle must be bonded to the gantry via the common return wire of the overfill 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.
- 3.5. 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. The design of the liquid-loading and vapour collection facilities on the loading gantry must be based on the following vehicle-connection envelope.
 - 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 being 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 plant vapour-collection system.