



STATUTORY INSTRUMENTS

**S.I. No. 217 of 2008**

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SEA POLLUTION (CONTROL OF POLLUTION BY NOXIOUS LIQUID  
SUBSTANCES IN BULK) REGULATIONS 2008

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SEA POLLUTION (CONTROL OF POLLUTION BY NOXIOUS LIQUID  
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S.I. No. 217 of 2008

SEA POLLUTION (CONTROL OF POLLUTION BY NOXIOUS LIQUID  
SUBSTANCES IN BULK) REGULATIONS 2008.

I, NOEL DEMPSEY, Minister for Transport, in exercise of the powers conferred on me by sections 10, 11, 12, 14, 15 and 17 of the Sea Pollution Act 1991 (No. 27 of 1991) and for the purpose of giving effect to the MARPOL Convention, Annex II, hereby make the following Regulations:

PART 1

GENERAL

*Citation and commencement*

1. (1) These Regulations may be cited as the Sea Pollution (Control of Pollution by Noxious Liquid Substances in Bulk) Regulations 2008.

(2) These Regulations come into operation on day after they are made.

*Interpretation*

2. (1) In these Regulations—

“the Act” means the Sea Pollution Act 1991;

“anniversary date” means the day and the month of each year that corresponds to the date of expiry of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;

“associated piping” means the pipeline from the suction point in a cargo tank to the shore connection used for unloading the cargo and includes all ship’s piping, pumps and filters which are in open connection with the cargo unloading line;

“Bulk Chemical Code” means the Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC.20(22), as amended by the Organization, but only if such amendments are adopted and brought into force in accordance with the provisions of article 16 of the MARPOL Convention concerning amendment procedures applicable to an appendix to the MARPOL Convention;

“Category X”, “Category Y” and “Category Z”, in relation to noxious liquid substances, shall be read with reference to Regulation 6 and Schedule 1;

*Notice of the making of this Statutory Instrument was published in  
“Iris Oifigiúil” of 1st July, 2008.*

“chemical tanker” means a ship constructed or adapted for the carriage in bulk of any liquid product listed in chapter 17 of the International Bulk Chemical Code;

“clean ballast” means ballast water carried in a tank which, since it was last used to carry a cargo containing a substance in Category X, Category Y or Category Z, has been thoroughly cleaned and the residues resulting therefrom have been discharged and the tank emptied in accordance with the appropriate requirements of Annex II to the MARPOL Convention;

“depth of water” means the charted depth;

“en route” means that the ship is under way at sea on a course or courses, including deviation from the shortest direct route, which as far as practicable for navigational purposes, will cause any discharge to be spread over as great an area of the sea as is reasonable and practicable;

“Gas Carrier Code” means the International Gas Carrier Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk as adopted by the Maritime Safety Committee of the Organization by resolution MSC.5(48), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of Article VIII of the International Convention for the Safety of Life at Sea (SOLAS), 1974 concerning the amendment procedures applicable to the annex to that Convention other than chapter I;

“high-viscosity substance” means a noxious liquid substance in Category X or Category Y with a viscosity equal to or greater than 50 mPa·s at the unloading temperature;

“International Bulk Chemical Code” means the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC.19(22), as amended by the Organization, but only if such amendments are adopted and brought into force in accordance with the provisions of article 16 of the MARPOL Convention concerning amendment procedures applicable to an appendix to an Annex to the MARPOL Convention;

“IPPC Certificate” means an International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;

“liquid substances” are those having a vapour pressure not exceeding 0.28 MPa absolute at a temperature of 37.8°C;

“low-viscosity substance” means a noxious liquid substance, which is not a high-viscosity substance;

“Manual” means Procedures and Arrangements Manual in accordance with the standard format for that Manual as set out in Schedule 4;

“Marine Notice” means a Notice described as such, issued by the Minister for Transport and which may be amended or replaced from time to time;

“MARPOL Convention” means the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol thereto, 1978;

“Minister” means the Minister for Transport;

“nearest land”, in relation to “from the nearest land”, means from the baseline from which the territorial sea in question is established in accordance with international law, except that, for the purposes of the MARPOL Convention “from the nearest land” off the north-eastern coast of Australia means from the line drawn from a point on the coast of Australia in—

latitude 11°00' S, longitude 142°08' E

to a point in latitude 10°35' S, longitude 141°55' E,

thence to a point latitude 10°00' S, longitude 142°00' E,

thence to a point latitude 9°10' S, longitude 143°52' E,

thence to a point latitude 9°00' S, longitude 144°30' E,

thence to a point latitude 10°41' S, longitude 145°00' E,

thence to a point latitude 13°00' S, longitude 145°00' E,

thence to a point latitude 15°00' S, longitude 146°00' E,

thence to a point latitude 17°30' S, longitude 147°00' E,

thence to a point latitude 21°00' S, longitude 152°55' E,

thence to a point latitude 24°30' S, longitude 154°00' E,

thence to a point on the coast of Australia

in latitude 24°42' S, longitude 153°15' E;

“NLS tanker” means a ship constructed or adapted to carry a cargo of noxious liquid substances in bulk and includes an oil tanker within the meaning given in Annex I of the MARPOL Convention when certified to carry a cargo or part cargo of Noxious Liquid Substances in bulk;

“non-solidifying substance” means a noxious liquid substance, which is not a solidifying substance;

“noxious liquid substance” means any substance indicated in the Pollution Category column of chapter 17 or 18 of the International Bulk Chemical Code or provisionally assessed under the provisions of Regulation 6(3) as falling into Category X, Category Y or Category Z;

“Organization” means the International Maritime Organization;

“Other Substances”, in relation to noxious liquid substances, shall be read with reference to Regulation 6 and Schedule 1;

“Party” means a State which has ratified the MARPOL Convention;

“PPM” means ml/m<sup>3</sup>;

“prewash”, in relation to procedures, means the prewash procedures as specified in Schedule 6, which Schedule includes matters referred to in Addendum B (as unamended in respect of ships built before 1 July 1994 and as amended in any other case) of Appendix 4 of Annex II of the MARPOL Convention;

“qualified person” means a surveyor of ships or a recognised organisation;

“recognised organisation” means an organisation recognised by the Commission of the European Communities under Article 4 of Council Directive 94/57/EC<sup>1</sup>, as amended, and by the Minister under European Communities (Ship Inspection and Survey Organisations) Regulations 2003 (S.I. No. 301 of 2003);

“residue” means any noxious liquid substance which remains for disposal;

“residue/water mixture” means residue to which water has been added for any purpose including tank cleaning, ballasting and bilge slops;

“segregated ballast” means ballast water introduced into a tank permanently allocated to the carriage of ballast or cargoes other than oil or noxious liquid substances as variously defined in the Annexes of the MARPOL Convention, and which is completely separated from the cargo and oil fuel system;

“ship constructed” means a ship the keel of which is laid or which is at a similar stage of construction and includes a ship to which paragraph (2) relates;

“similar stage of construction” means the stage at which—

- (a) construction identifiable with a specific ship begins, and
- (b) assembly of that ship has commenced comprising at least 50 tons or one per cent of the estimated mass of all structural material, whichever is less;

“solidifying substance” means a noxious liquid substance which—

- (a) in the case of a substance with a melting point of less than 15°C, is at a temperature of less than 5°C above its melting point at the time of unloading, or
- (b) in the case of a substance with a melting point of equal to or greater than 15°C, is at a temperature of less than 10°C above its melting point at the time of unloading;

<sup>1</sup>OJ No. L319, 12.12.94, p.20



“surveyor” means a surveyor of ships or other competent person appointed under section 20 of the Act for the purposes of section 17 of the Act.

(2) A ship converted to a chemical tanker, irrespective of the date of construction, shall be treated as a chemical tanker constructed on the date on which such conversion commenced, but this does not apply to the modification of a ship, which complies with all of the following conditions:

- (a) the ship is constructed before 1 July 1986, and
- (b) the ship is certified under the Bulk Chemical Code to carry only those products identified by the Code as substances with pollution hazards only.

#### *Application*

3. (1) Subject to section 4 of the Act and unless expressly provided otherwise, these Regulations apply to all ships certified to carry noxious liquid substances in bulk;

(2) Where a cargo subject to the provisions of Annex I of the MARPOL Convention is carried in a cargo space of an NLS tanker, the appropriate requirements of Annex I of the MARPOL Convention shall also apply.

(3) The discharge of bilge or ballast water or other residues or mixtures containing only substances referred to as “Other Substances” shall not be subject to any requirements of the Regulations.

#### *Exemptions*

4. (1) With respect to amendments to carriage requirements due to the upgrading of the categorisation of a substance, the following shall apply:

- (a) where an amendment to MARPOL Annex II and the International Bulk Chemical Code and Bulk Chemical Code involves changes to the structure or equipment and fittings due to the upgrading of the requirements for the carriage of certain substances, the Minister may modify, or delay for a specified period, the application of such an amendment to ships constructed before the date of entry into force of that amendment, if the immediate application of such an amendment is considered unreasonable or impracticable; any such relaxation shall be determined by the Minister with respect to each substance;
- (b) where the Minister allows a relaxation of the application of an amendment under this Regulation, he or she shall cause to be submitted to the Organization a report giving details of the ship, or ships concerned, the cargoes certified to carry, the trade in which each ship is engaged and the justification for the relaxation, for circulation to the Parties to the MARPOL Convention for their information and appropriate action, if any, and reflect the exemption on the IPPC Certificate as referred to in Regulation 7 or Regulation 9;

(c) notwithstanding paragraphs (a) and (b), the Minister may exempt ships from the carriage requirements under Regulation 11 for ships certified to carry individually identified vegetable oils identified by the relevant footnote in chapter 17 of the International Bulk Chemical Code, but only if the ship complies with the following conditions:

(i) subject to the other provisions of this Regulation, the NLS tanker shall meet all requirements for ship type 3 as identified in the International Bulk Chemical Code except for cargo tank location;

(ii) the cargo tanks shall be located at the following distances inboard:

(I) wing tanks or spaces shall be arranged such that cargo tanks are located inboard of the moulded line of the side shell plating nowhere less than 760 mm;

(II) double bottom tanks or spaces shall be arranged such that the distance between the bottom of the cargo tanks and the moulded line of the bottom shell plating measured at right angles to the bottom shell plating is not less than  $B/15$  (m) or 2.0 m at the centreline, whichever is the lesser. The minimum distance shall be 1.0 metre;

and the entire cargo tank length shall be protected by ballast tanks or spaces other than tanks that carry oil;

(iii) the relevant IPPC Certificate shall indicate the exemption granted.

(2) Subject to paragraph (3), Regulation 12(1) does not apply to a ship constructed before 1 July 1986 which is engaged in restricted voyages as determined by the Minister between—

(a) ports or terminals within the State, or

(b) ports or terminals of other Parties to the MARPOL Convention with their agreement.

(3) Paragraph (2) only applies to a ship constructed before 1 July 1986 if—

(a) each time a tank containing Category X, Category Y or Category Z substances or mixtures is to be washed or ballasted, the tank is washed in accordance with a prewash procedure (approved by a qualified person) in compliance with Schedule 6 of these Regulations, and the tank washings are discharged to a reception facility,

(b) subsequent washings or ballast water are discharged to a reception facility or at sea in accordance with other provisions of these Regulations,

- (c) the adequacy of the reception facilities at the ports or terminals referred to in paragraph (2) is, for the purpose of this paragraph, approved by the Minister and the relevant administrations of other Parties to the MARPOL Convention within which such ports or terminals are situated, and
- (d) the IPPC Certificate required under these Regulations is endorsed to the effect that the ship is solely engaged in such restricted voyages,

and for the purposes of this paragraph, in the case of ships engaged in voyages to ports or terminals under the jurisdiction of other Parties to the MARPOL Convention, the Minister shall cause to have made a communication to the Organization, for circulation to the Parties to the Convention, particulars of the exemption, for their information and appropriate action, if any.

(4) For a ship whose constructional and operational features are such that ballasting of cargo tanks is not required and cargo tank washing is only required for repair or dry-docking, the Minister may allow exemption from Regulation 12, but only if all of the following conditions are complied with:

- (a) the design, construction and equipment of the ship are approved by a qualified person, having regard to the service for which it is intended;
- (b) any effluent from tank washings which may be carried out before a repair or dry-docking is discharged to a reception facility, the adequacy of which is ascertained by the Minister;
- (c) the IPPC Certificate required under these Regulations indicates—
  - (i) that each cargo tank is certified for the carriage of a restricted number of substances which are comparable and can be carried alternately in the same tank without intermediate cleaning, and
  - (ii) the particulars of the exemption;
- (d) the ship carries a Manual approved by a qualified person;

and for the purposes of this paragraph, in the case of ships engaged in voyages to ports or terminals under the jurisdiction of other Parties to the MARPOL Convention, the Minister shall cause to have made a communication to the Organization, for circulation to the Parties to the Convention, particulars of the exemption, for their information and appropriate action, if any.

#### *Equivalents*

5. (1) A fitting, material, appliance or apparatus may be fitted in a ship as an alternative to that required by these Regulations if the Minister is satisfied that such fitting, material, appliance or apparatus is at least as effective as that required by these Regulations. No substitution of operational methods to control the discharge of noxious liquid substances shall be considered as being

equivalent to those design and construction features which are prescribed by these Regulations.

(2) Any reference in these Regulations to standards and guidelines developed by the Organization, shall include a reference to any document amending those standards and guidelines which is considered by the Minister to be relevant from time to time and is specified in a Marine Notice.

(3) Notwithstanding paragraphs (1) and (2), the construction and equipment of liquefied gas carriers certified to carry noxious liquid substances listed in the applicable Gas Carrier Code, shall be deemed to be equivalent to the construction and equipment requirements contained in Regulations 11 and 12, but only if the gas carrier meets all following conditions:

- (a) hold a Certificate of Fitness in accordance with the appropriate Gas Carrier Code for ships certified to carry liquefied gases in bulk;
- (b) hold an IPPC Certificate, in which it is certified that the gas carrier may carry only those noxious liquid substances identified and listed in the appropriate Gas Carrier Code;
- (c) be provided with segregated ballast arrangements;
- (d) be provided with pumping and piping arrangements, which, to the satisfaction of a qualified person, ensure that the quantity of cargo residue remaining in the tank and its associated piping after unloading does not exceed the applicable quantity of residue as required by paragraph (1), (2) or (3) of Regulation 12;
- (e) be provided with a Manual, approved by a qualified person, ensuring that no operational mixing of cargo residues and water will occur and that no cargo residues will remain in the tank after applying the ventilation procedures prescribed in the Manual.

## PART 2

### CATEGORISATION OF NOXIOUS LIQUID SUBSTANCES

#### *Categorisation and listing of noxious liquid substances*

6. (1) For the purpose of these Regulations, noxious liquid substances are divided into the following categories:

Category X: noxious liquid substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present a major hazard to either marine resources or human health and, therefore, justify the prohibition of the discharge into the marine environment;

Category Y: noxious liquid substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present a hazard to either marine resources or human health or cause harm to amenities or other

legitimate uses of the sea and therefore justify a limitation on the quality and quantity of the discharge into the marine environment;

Category Z: noxious liquid substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present a minor hazard to either marine resources or human health and therefore justify less stringent restrictions on the quality and quantity of the discharge into the marine environment;

Other Substances: substances indicated as OS (Other Substances) in the pollution category column of chapter 18 of the International Bulk Chemical Code which have been evaluated and found to fall outside Category X, Category Y or Category Z as provided for by this paragraph because they are considered to present no harm to marine resources, human health, amenities or other legitimate uses of the sea when discharged into the sea from tank cleaning or deballasting operations.

(2) Guidelines for use in the categorisation of noxious liquid substances are set out in Schedule 1.

(3) (a) Any proposed operation to carry a liquid substance in bulk, which has not been categorised under paragraph (1), shall not proceed until full agreement has been reached between the relevant Governments of Parties to the MARPOL Convention regarding the establishment of a provisional assessment on the basis of the guidelines referred to in paragraph (2).

(b) Where the State is either the producing or the shipping country initiating the agreement, then arrangements shall be made, as soon as possible but, not later than 30 days after the agreement has been reached, to notify the Organization and provide details of the substance and the provisional assessment for annual circulation to other Parties for their information.

### PART 3

#### SURVEYS AND CERTIFICATION

##### *Survey and certification of chemical tankers*

7. Notwithstanding Regulations 8, 9, and 10, chemical tankers which have been surveyed and certified by Parties in accordance with the provisions of the International Bulk Chemical Code or the Bulk Chemical Code, as applicable, shall be deemed to have complied with those Regulations, and the certificate issued under that Code shall have the same force and receive the same recognition as the IPPC Certificate.

##### *Surveys*

8. (1) (a) Ships carrying noxious liquid substances in bulk shall be subject to the following surveys:

- (i) an initial survey before the ship is put in service or before the IPPC Certificate required under Regulation 9 is issued for the first time, which shall include a complete survey of its structure, equipment, systems, fittings, arrangements and material in so far as the ship is covered by these Regulations; this survey shall be such as to ensure that the structure, equipment, systems, fittings, arrangements and material fully comply with the applicable requirements of these Regulations;
  - (ii) a renewal survey at intervals specified by a qualified person, but not exceeding 5 years, except where paragraph (2), (5), (6) or (7) of Regulation 10 applies; the renewal survey shall be such as to ensure that the structure, equipment, systems, fittings, arrangements and material fully comply with applicable requirements of these Regulations;
  - (iii) an intermediate survey within 3 months before or after the second anniversary date or within 3 months before or after the third anniversary date of the IPPC Certificate which shall take the place of one of the annual surveys specified in paragraph 1(*d*); the intermediate survey shall be such as to ensure that the equipment and associated pump and piping systems fully comply with the applicable requirements of these Regulations and are in good working order; such intermediate surveys shall be endorsed on the IPPC Certificate;
  - (iv) an annual survey within 3 months before or after each anniversary date of the IPPC Certificate including a general inspection of the structure, equipment, systems, fittings, arrangements and material referred to in paragraph 1(*a*) to ensure that they have been maintained in accordance with paragraph 3 of this Regulation and that they remain satisfactory for the service for which the ship is intended; such annual surveys shall be endorsed on the IPPC Certificate.
- (*b*) An additional survey either general or partial, according to the circumstances, shall be made after a repair resulting from investigations prescribed in paragraph (3) or whenever any important repairs or renewals are made. The survey shall be such as to ensure that the necessary repairs or renewals have been effectively made, that the material and workmanship of such repairs or renewals are in all respects satisfactory and that the ship complies in all respects with the requirements of these Regulations.
- (2) (*a*) Surveys of ships as regards the enforcement of these Regulations shall be carried out by a qualified person.
- (*b*) A qualified person, when conducting surveys under paragraph (2)(*a*), shall be empowered to—

- (i) require repairs to a ship, and
  - (ii) carry out surveys, if requested by the appropriate authorities of a port State.
- (c) Where the qualified person is a recognised organisation, any function under these Regulations (including the carrying out of a survey) may be performed only in respect of a ship flying the flag of the State.
- (d) Where a qualified person determines that the condition of the ship or its equipment does not correspond substantially with the particulars of the IPPC Certificate, or is such that the ship is not fit to proceed to sea without presenting an unreasonable threat of harm to the marine environment, then the qualified person shall immediately ensure that corrective action is taken and in due course notify the Minister. If such corrective action is not taken, the Minister shall be notified immediately by the qualified person and the IPPC Certificate shall be withdrawn by the Minister. If the ship is in a port of another Party, the appropriate authorities of that Party shall also be notified immediately.
- (3) (a) The condition of the ship and its equipment shall be maintained to conform with these Regulations so as to ensure that the ship in all respects will remain fit to proceed to sea without presenting an unreasonable threat of harm to the marine environment.
- (b) After any survey of the ship required under paragraph (1) has been completed, no change shall be made in the structure, equipment, systems, fittings, arrangements or material covered by the survey, without the sanction of a qualified person, except the direct replacement of such equipment and fittings.
- (c) Whenever an accident occurs to a ship or a defect is discovered which substantially affects the integrity of the ship or the efficiency or completeness of its equipment covered by these Regulations, the master or owner of the ship shall report at the earliest opportunity to the Minister and the qualified person responsible for issuing the relevant IPPC Certificate, who shall cause investigations to be initiated to determine whether a survey under this Regulation is necessary. If the ship is in a port of another Party, the master or owner shall also report immediately to the appropriate authorities of the port State. The qualified person concerned shall ascertain that such report has been made.
- (4) The Minister shall, upon receipt of an application for survey and on payment of such fee (if any) as may be prescribed by him or her under section 17 of the Act, cause the ship to be surveyed by a surveyor of ships.

*Issue or endorsement of IPPC Certificate*

9. (1) An IPPC Certificate shall be issued, after an initial or renewal survey in accordance with Regulation 8, to any ship intended to carry noxious liquid



substances in bulk and which is engaged in voyages to ports or terminals under the jurisdiction of other Parties.

- (2) (a) On receipt of a declaration of survey carried out in accordance with Regulation 8 and on payment of such fee (if any) as may be prescribed, a person authorised by the Minister shall issue an IPPC Certificate to any ship intended to carry noxious liquid substances in bulk and which is engaged in voyages to ports or terminals under the jurisdiction of other Parties.
- (b) Alternatively, a recognised organisation authorised by the Minister for this purpose may issue an IPPC Certificate.
- (3) Every IPPC Certificate shall be issued or endorsed as appropriate by a qualified person.
- (4) (a) A ship which is entitled to fly the flag of the State may be surveyed by the Government of another Party at the request of the Minister and, if they are satisfied that the provisions of these Regulations are complied with, they shall issue or authorise the issue of an IPPC Certificate to the ship, and where appropriate, endorse or authorise the endorsement of that IPPC Certificate on the ship, in accordance with these Regulations.
- (b) A ship which is entitled to fly the flag of another Party may be surveyed by a surveyor of ships, at the request of the Government of that Party, and, if satisfied that the provisions of these Regulations are complied with, shall cause an IPPC Certificate to be issued to the ship and, where appropriate, endorse or authorise the endorsement of that Certificate on the ship in accordance with these Regulations.
- (5) The IPPC Certificate shall be in the form set out in Schedule 3.

*Duration and validity of IPPC Certificate*

10. (1) An IPPC Certificate shall be issued for a period specified by the Minister which shall not exceed 5 years from the date of issue.
- (2) (a) Notwithstanding the requirements of paragraph (1), when the renewal survey is completed within 3 months before the expiry date of the existing IPPC Certificate, the new certificate shall be valid from the date of completion of the renewal survey to a date not exceeding 5 years from the date of expiry of the existing certificate.
- (b) When the renewal survey is completed after the expiry date of the existing IPPC Certificate, the new IPPC Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding 5 years from the date of expiry of the existing certificate.
- (c) When the renewal survey is completed more than 3 months before the expiry date of the existing IPPC Certificate, the new IPPC Certificate shall be valid from the date of completion of the renewal survey to a



date not exceeding 5 years from the date of completion of the renewal survey.

(3) If an IPPC Certificate is issued for a period of less than 5 years, a qualified person may extend the validity of the certificate beyond the expiry date to the maximum period specified in paragraph (1), but only if the surveys referred to in clauses (iii) and (iv) of Regulation 8(1)(a) applicable when an IPPC Certificate is issued for a period of 5 years are carried out as appropriate.

(4) If a renewal survey has been completed and a new IPPC Certificate cannot be issued or placed on board the ship before the expiry date of the existing IPPC Certificate, a qualified person may endorse the existing IPPC Certificate and such a certificate shall be accepted as valid for a further period which shall not exceed 5 months from the expiry date.

(5) (a) If a ship at the time when an IPPC Certificate expires is not in a port in which it is to be surveyed, the Minister may extend the period of validity of the certificate but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so.

(b) No IPPC Certificates shall be extended for a period longer than 3 months, and a ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new IPPC Certificate.

(c) When the renewal survey is completed, the new IPPC Certificate shall be valid to a date not exceeding 5 years from the date of expiry of the existing certificate before the extension was granted.

(6) An IPPC Certificate issued to a ship engaged on short voyages which has not been extended under paragraph (5) may be extended by the Minister for a period of grace of up to one month from the date of expiry stated on it. When the renewal survey is completed, the new IPPC Certificate shall be valid to a date not exceeding 5 years from the date of expiry of the existing certificate before the extension was granted.

(7) In special circumstances, as determined by the Minister, a new IPPC Certificate need not be dated from the date of expiry of the existing certificate as required by paragraph (2), (5) or (6). In these special circumstances, the new IPPC Certificate shall be valid to a date not exceeding 5 years from the date of completion of the renewal survey.

(8) If an annual or intermediate survey is completed before the period specified in Regulation 8, then—

(a) the anniversary date shown on the IPPC Certificate shall be amended by endorsement to a date which shall not be more than 3 months later than the date on which the survey was completed,

- (b) the subsequent annual or intermediate survey required by Regulation 8 shall be completed at the intervals prescribed by that Regulation using the new anniversary date, and
  - (c) the expiry date may remain unchanged, but only if one or more annual or intermediate surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by Regulation 8 are not exceeded.
- (9) An IPPC Certificate issued under Regulation 9 shall cease to be valid in any of the following cases:
- (a) if the relevant surveys are not completed within the periods specified under Regulation 8(1);
  - (b) if the certificate is not endorsed in accordance with clause (iii) or (iv) of Regulation 8(1)(a);
  - (c) if the ship transfers to the flag of another State.

#### PART 4

#### DESIGN, CONSTRUCTION, ARRANGEMENT AND EQUIPMENT

##### *Design, construction, equipment and operations*

11. (1) The design, construction, equipment and operation of ships certified to carry noxious liquid substances in bulk identified in chapter 17 of the International Bulk Chemical Code, shall be in compliance with the following provisions to minimize the uncontrolled discharge into the sea of such substances:

- (a) the International Bulk Chemical Code when the chemical tanker is constructed on or after 1 July 1986;
- (b) the Bulk Chemical Code as referred to in paragraph 1.7.2 of that Code for—
  - (i) ships for which the building contract is placed on or after 2 November 1973 but constructed before 1 July 1986, and which are engaged on voyages to ports or terminals under the jurisdiction of other Parties, and
  - (ii) ships constructed on or after 1 July 1983 but before 1 July 1986, which are engaged solely on voyages between ports or terminals within the State;
- (c) the Bulk Chemical Code as referred to in paragraph 1.7.3 of that Code for—
  - (i) ships for which the building contract is placed before 2 November 1973 and which are engaged on voyages to ports or terminals under the jurisdiction of other Parties, and

- (ii) ships constructed before 1 July 1983, which are solely engaged on, voyages between ports or terminals within the State.

(2) Ships other than chemical tankers or liquefied gas carriers certified to carry noxious liquid substances in bulk identified in chapter 17 of the International Bulk Chemical Code, shall be subject to such measures as may be determined by the Minister.

*Pumping, piping, unloading arrangements and slop tanks*

12. (1) Every ship constructed before 1 July 1986 shall be provided with a pumping and piping arrangement to ensure that each tank certified for the carriage of substances in Category X or Category Y does not retain a quantity of residue in excess of 300 litres in the tank and its associated piping and that each tank certified for the carriage of substances in Category Z does not retain a quantity of residue in excess of 900 litres in the tank and its associated piping. A performance test shall be carried out in accordance with Schedule 5, which Schedule sets out the text of Appendix 5 to Annex II of the MARPOL Convention.

(2) Every ship constructed on or after 1 July 1986 but before 1 January 2007 shall be provided with a pumping and piping arrangement to ensure that each tank certified for the carriage of substances in Category X or Category Y does not retain a quantity of residue in excess of 100 litres in the tank and its associated piping and that each tank certified for the carriage of substances in Category Z does not retain a quantity of residue in excess of 300 litres in the tank and its associated piping. A performance test shall be carried out in accordance with Schedule 5.

(3) Every ship constructed on or after 1 January 2007 shall be provided with a pumping and piping arrangement to ensure that each tank certified for the carriage of substances in Category X, Category Y or Category Z does not retain a quantity of residue in excess of 75 litres in the tank and its associated piping. A performance test shall be carried out in accordance with Schedule 5.

(4) For a ship other than a chemical tanker constructed before 1 January 2007 which cannot meet the requirements for the pumping and piping arrangements for substances in Category Z referred to in paragraphs (1) and (2) no quantity requirement shall apply. Compliance is deemed to be reached if the tank is emptied to the most practicable extent.

(5) Pumping performance tests referred to in paragraphs (1), (2) and (3) shall be approved by the qualified person. Pumping performance tests shall use water as the test medium.

(6) Ships certified to carry substances of Category X, Category Y or Category Z shall have an underwater discharge outlet (or outlets).

(7) For ships constructed before 1 January 2007 and certified to carry substances in Category Z an underwater discharge outlet as required under paragraph (6) is not mandatory.

(8) The underwater discharge outlet or outlets shall be located within the cargo area in the vicinity of the turn of the bilge and shall be so arranged as to avoid the re-intake of residue/water mixtures by the ship's seawater intakes.

(9) The underwater discharge outlet arrangement shall be such that the residue/water mixture discharged into the sea will not pass through the ship's boundary layer. For that purpose, when the discharge is made normal to the ship's shell plating, the minimum diameter of the discharge outlet is governed by the following equation:

$$d = \frac{Q_d}{5 L_d}$$

where:

$d$  = minimum diameter of the discharge outlet (m)

$L_d$  = distance from the forward perpendicular to the discharge outlet (m)

$Q_d$  = the maximum rate selected at which the ship may discharge a residue/water mixture through the outlet (m<sup>3</sup>/h).

(10) When the discharge is directed at an angle to the ship's shell plating, the above relationship shall be modified by substituting for  $Q_d$  the component of  $Q_d$  which is normal to the ship's shell plating.

(11) Notwithstanding that these Regulations do not otherwise require the fitting of dedicated slop tanks, slop tanks may be needed for certain washing procedures. Cargo tanks may be used as slop tanks.

## PART 5

### OPERATIONAL DISCHARGES OF RESIDUES OF NOXIOUS LIQUID SUBSTANCES

#### *Control of discharges of residues of noxious liquid substances*

13. Subject to section 11 of the Act, the control of discharges of residues of noxious liquid substances or ballast water, tank washings or other mixtures containing such substances shall, where appropriate, be in compliance with the requirements set out in Regulations 14 to 22.

#### *Discharge provisions*

14. (1) The discharge into the sea of residues of substances assigned to Category X, Category Y or Category Z or of those provisionally assessed as such or ballast water, tank washings or other mixtures containing such substances shall be prohibited unless such discharges are made in full compliance with the applicable operational requirements contained in these Regulations.

(2) Before any prewash or discharge procedure is carried out in accordance with Regulations 15 to 21, the relevant tank shall be emptied to the maximum extent in accordance with the procedures prescribed in the Manual.

(3) The carriage of substances which have not been categorized, provisionally assessed or evaluated as referred to in Regulation 6 or of ballast water, tank washings or other mixtures containing such residues shall be prohibited along with any consequential discharge of such substances into the sea.

*Discharge standards*

15. (1) Where the provisions of this Part allow the discharge into the sea of residues of substances in Category X, Category Y or Category Z or of those provisionally assessed as such or ballast water, tank washings or other mixtures containing such substances, then the following discharge standards shall apply:

- (a) the ship is proceeding en route at a speed of at least 7 knots in the case of self-propelled ships or at least 4 knots in the case of ships which are not self-propelled;
- (b) the discharge is made below the waterline through the underwater discharge outlet or outlets not exceeding the maximum rate for which the underwater discharge outlet or outlets are designed; and
- (c) the discharge is made at a distance of not less than 12 nautical miles from the nearest land in a depth of water of not less than 25 metres.

(2) For ships constructed before 1 January 2007 the discharge into the sea of residues of substances in Category Z or of those provisionally assessed as such or ballast water, tank washings or other mixtures containing such substances below the waterline is not mandatory.

(3) The Minister may waive the requirements of paragraph (1)(c) for substances in Category Z, regarding the distance of not less than 12 nautical miles from the nearest land for ships solely engaged in voyages within the State. In addition, the Minister may waive the same requirement regarding the discharge distance of not less than 12 nautical miles from the nearest land for a particular ship entitled to fly the flag of the State, when engaged in voyages within waters subject to the sovereignty or jurisdiction of one adjacent state after the establishment of an agreement, in writing, of a waiver between this State and the other state involved provided that no third party will be affected. Information on such agreement shall be communicated by a person authorised in that behalf by the Minister to the Organization within 30 days for further circulation to the Parties to the Convention for their information and appropriate action if any.

*Ventilation of cargo residues*

16. Ventilation procedures approved by the Minister may be used to remove cargo residues from a tank. Such procedures shall be in accordance with Schedule 7, which Schedule includes matters referred to in Addendum C of Appendix 4 of Annex II of the MARPOL Convention. Any water subsequently introduced into the tank shall be regarded as clean and shall not be subject to the discharge requirements in these Regulations.

*Prewash exemption*

17. (1) The master of a ship, which is in the State and has delivered cargo in the State, may apply to the Minister for exemption from the requirements of pre-wash.

(2) Exemption may only be considered if any of the following conditions are met:

- (a) the unloaded tank is to be reloaded with the same substance or another substance compatible with the previous one and that the tank will not be washed or ballasted prior to loading;
- (b) the unloaded tank is neither washed nor ballasted at sea; the prewash in accordance with the applicable provision of this Part shall be carried out at another port provided that it has been confirmed in writing that a reception facility at that port is available and is adequate for such a purpose;
- (c) the cargo residues will be removed by a ventilation procedure approved by the Minister in accordance with Schedule 7.

*Use of cleaning agents or additives*

18. (1) When a washing medium other than water, such as mineral oil or chlorinated solvent, is used instead of water to wash a tank, its discharge shall be governed by the provisions of either Annex I or Annex II of the MARPOL Convention, which would apply to the medium had it been carried as cargo. Tank washing procedures involving the use of such a medium shall be set out in the Manual and be approved by the Minister.

(2) When small amounts of cleaning additives (detergent products) are added to water in order to facilitate tank washing, no additives containing pollution Category X components shall be used except those components that are readily biodegradable and present in a total concentration of less than 10 per cent of the cleaning additive. No restrictions additional to those applicable to the tank due to the previous cargo shall apply.

*Discharge of residues of Category X*

19. (1) Subject to Regulation 14, this Regulation applies to the discharge of residues of Category X.

- (2) (a) A tank from which a substance in Category X has been unloaded, shall be prewashed before the ship leaves the port of unloading.
- (b) The resulting residues shall be discharged to a reception facility until the concentration of the substance in the effluent to such facility, as indicated by analyses of samples of the effluent taken by the surveyor, is at or below 0.1 per cent by weight.
- (c) When the required concentration level has been achieved, remaining tank washings shall continue to be discharged to the reception facility until the tank is empty.

- (d) Appropriate entries of these operations shall be made in the Cargo Record Book and endorsed by the surveyor referred to in Regulation 25 (1).

(3) Any water subsequently introduced into the tank may be discharged into the sea in accordance with the discharge standards in Regulation 15.

(4) When the State is the receiving party, and where the Minister is satisfied that it is impracticable to measure the concentration of the substance in the effluent without causing undue delay to the ship, he, or she, may accept an alternative procedure as being equivalent to obtain the required concentration in paragraph (2), but only if:

- (a) the tank is prewashed in accordance with a procedure approved by the Minister in compliance with Schedule 6, and
- (b) appropriate entries shall be made in the Cargo Record Book and endorsed by the surveyor referred to in Regulation 25 (1).

*Discharge of residues of Category Y and Category Z*

20. (1) Subject to Regulation 14, this Regulation applies to the discharge of residues of Category Y and Category Z.

(2) With respect to the residue discharge procedures for substances in Category Y or Category Z the discharge standards set out in Regulation 15 shall apply.

(3) (a) If the unloading of a substance of Category Y or Category Z is not carried out in accordance with the Manual, a prewash shall be carried out before the ship leaves the port of unloading, unless alternative measures are taken to the satisfaction of the surveyor referred to in Regulation 25 (1) of these Regulations to remove the cargo residues from the ship to quantities specified in these Regulations.

(b) The resulting tank washings of the prewash shall be discharged to a reception facility at the port of unloading or another port with a suitable reception facility provided that it has been confirmed in writing that a reception facility at that port is available and is adequate for such a purpose.

(4) The following shall apply for high-viscosity or solidifying substances in Category Y:

- (a) a prewash procedure as specified in Schedule 6 shall be applied,
- (b) the residue/water mixture generated during the prewash shall be discharged to a reception facility until the tank is empty, and
- (c) any water subsequently introduced into the tank may be discharged into the sea in accordance with the discharge standards in Regulation 15.



*Operational requirements for ballasting and deballasting*

21. (1) After unloading, and, if required, after a prewash, a cargo tank may be ballasted. Procedures for the discharge of such ballast are set out in Regulation 15.

(2) Ballast introduced into a cargo tank which has been washed to such an extent that the ballast contains less than 1 ppm of the substance previously carried, may be discharged into the sea without regard to the discharge rate, ship's speed and discharge outlet location, provided that the ship is not less than 12 miles from the nearest land and in water that is not less than 25 metres deep. The required degree of cleanliness has been achieved when a prewash as specified in Schedule 6 has been carried out and the tank has been subsequently washed with a complete cycle of the cleaning machine for ships built before 1 July 1994 or with a water quantity not less than that calculated with  $k=1.0$ .

(3) The discharge into the sea of clean or segregated ballast shall not be subject to the requirements of these Regulations.

*Discharges in Antarctic Area*

22. (1) In this Regulation "Antarctic Area" means the sea area south of latitude 60°S.

(2) In the Antarctic area any discharge into the sea of noxious liquid substances or mixtures containing such substances is prohibited.

*Procedures and Arrangements Manual*

23. (1) Every ship certified to carry substances of Category X, Category Y or Category Z shall have on board a Manual approved by a qualified person. The Manual shall be in the form set out in Schedule 4, which Schedule sets out the text of Appendix 4 of Annex II of the MARPOL Convention.

(2) The main purpose of the Manual is to identify for the ship's officers, the physical arrangements and all the operational procedures with respect to cargo handling, tank cleaning, slops handling and cargo tank ballasting and deballasting which are to be followed in order to comply with the requirements of these Regulations.

*Cargo record book*

24. (1) Every ship to which these Regulations apply shall be provided with a Cargo Record Book, whether as part of the ship's official logbook or otherwise, in the form specified in Schedule 2, which Schedule includes matters referred to in Appendix 4 of Annex II of the MARPOL Convention.

(2) After completion of any operation specified in Schedule 2, the operation shall be promptly recorded in the Cargo Record Book.

(3) In the event of an accidental discharge of a noxious liquid substance or a mixture containing such a substance or a discharge under the provisions of section 11 of the Act, an entry shall be made in the Cargo Record Book stating the circumstances of, and the reason for, the discharge.



(4) Each entry shall be signed by the officer or officers in charge of the operation concerned and each page shall be signed by the master of the ship. The entries in the Cargo Record Book, for ships holding an IPPC Certificate or a certificate referred to in Regulation 7 shall be at least in English.

(5) The Cargo Record Book shall be kept in such a place as to be readily available for inspection and, except in the case of unmanned ships under tow, shall be kept on board the ship. It shall be retained for a period of 3 years after the last entry has been made.

(6) A Surveyor, or a duly authorised port state control officer of a Party, may inspect the Cargo Record Book on board any ship to which these Regulations apply while the ship is in a port, and may make a copy of any entry in that book and may require the master of the ship to certify that the copy is a true copy of such entry. Any copy so made which has been certified by the master of the ship as a true copy of an entry in the ship's Cargo Record Book shall be made admissible in any judicial proceedings as evidence of the facts stated in the entry. The inspection of a Cargo Record Book and the taking of a certified copy by a surveyor, or a port state control officer, under this paragraph shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

## PART 6

### MEASURES OF CONTROL BY PORT STATES

#### *Measures of control*

25. (1) Surveyors appointed by the Minister under section 20 of the Act shall be appointed for the purpose of implementing this Regulation.

(2) When a surveyor has verified that an operation has been carried out in accordance with the requirements of the Manual, or has granted an exemption for a prewash, then that surveyor shall make an appropriate entry in the Cargo Record Book.

(3) The master of a ship certified to carry noxious liquid substances in bulk shall ensure that the provisions of Regulations 13 to 22, this Regulation and Regulation 26 have been complied with and that the Cargo Record Book is completed in accordance with Regulation 24 whenever operations as referred to in that Regulation take place.

(4) A tank which has carried a Category X substance shall be prewashed in accordance with Regulation 19. The appropriate entries of these operations shall be made in the Cargo Record Book and endorsed by the surveyor referred to under paragraph (1).

(5) Where the Minister, in cases where the receiving party is in the State, is satisfied that it is impracticable to measure the concentration of the substance in the effluent without causing undue delay to the ship, he, or she, may authorise an alternative procedure to be used as referred to in Regulation 19(4), but only if the surveyor referred to under paragraph (1) certifies in the Cargo Record Book that—

- (a) the tank, its pump and piping systems have been emptied,
- (b) the prewash has been carried out in accordance with the provisions of Schedule 6, and
- (c) the tank washing resulting from such prewash has been discharged to a reception facility and the tank is empty.

(6) At the request of the ship's master, the Minister, when the State is the receiving party, may exempt the ship from the requirements for a prewash referred to in the applicable provisions of Part 5 when one of the conditions of Regulation 17 is met.

(7) An exemption referred to in paragraph (6) may only be granted by the Minister to a ship engaged in voyages to ports or terminals under the jurisdiction of other Parties. When such an exemption has been granted, the appropriate entry made in the Cargo Record Book shall be endorsed by the surveyor referred to in paragraph (1).

(8) If the unloading is not carried out in accordance with the pumping conditions for the tank approved by the Minister and based on Schedule 5, alternative measures may be taken to the satisfaction of the surveyor referred to in paragraph (1) to remove the cargo residues from the ship to quantities specified in Regulation 12 as applicable. The appropriate entries shall be made in the Cargo Record Book.

*Port State control on operational requirements*

26. (1) A ship that is registered in another state that is a party to the MARPOL Convention may, when in a port within the jurisdiction of the State, be subject to inspection by persons authorised under Regulation 25(1) concerning operational requirements under these Regulations, where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of pollution by noxious liquid substances.

(2) If, consequent on an inspection of a ship by a person as authorised under Regulation 25(1) and pursuant to the exercise of his or her functions under paragraph (1), he or she confirms that the master or crew are not familiar with the procedures referred to in that paragraph, the Minister shall take such steps (which he or she is hereby empowered to take) as will ensure that the ship shall not sail from the port until such time as the master or crew or, as the case may be, both the master and crew have become familiar with those procedures.

(3) So much of the procedures specified in Article 5 of the MARPOL Convention as are appropriate shall apply, with any necessary modifications, for the purpose of this Regulation.

(4) Nothing in this Regulation shall operate to derogate from the powers and duties of the Minister or any other person under the Act or any regulations made thereunder.

## PART 7

PREVENTION OF POLLUTION ARISING FROM AN INCIDENT  
INVOLVING NOXIOUS LIQUID SUBSTANCES*Shipboard marine pollution emergency plan for noxious liquid substances*

27. (1) Every ship of 150 gross tonnage and above certified to carry noxious liquid substances in bulk shall carry on board a shipboard marine pollution emergency plan for noxious liquid substances approved by a qualified person.

(2) The shipboard marine pollution emergency plan for noxious liquid substances shall be—

- (a) in accordance with Guidelines developed by the Organization entitled “Guidelines for the development of shipboard marine pollution emergency plans for oil and/or noxious liquid substances” and adopted by it by resolution MEPC 85/44 as amended by resolution MEPC 137/53, and
- (b) in English and one or more languages that are understood by the master and officers.

(3) The shipboard marine pollution emergency plan for noxious liquid substances shall contain—

- (a) the procedure to be followed by the master to report an incident of pollution by noxious liquid substances, required by Article 8 and Protocol I of the MARPOL Convention, in accordance with the Guidelines developed by the Organization reporting requirements, including guidelines for reporting incidents involving dangerous goods and adopted by it by resolution A851 (20) as amended by resolution MEPC 138/53,
- (b) the list of authorities or persons to be contacted in the event of an incident of pollution by noxious liquid substances,
- (c) a detailed description of the action to be taken immediately by persons on board to reduce or control the discharge of noxious liquid substances following the incident, and,
- (d) the procedures and point of contact on the ship for co-ordinating shipboard action with national and local authorities in combating the pollution.

(4) Where a shipboard oil pollution emergency plan required under Regulation 37 of the Sea Pollution (Prevention of Oil Pollution) Regulations 2007 (S.I. No. 788 of 2007), applies to a ship and the shipboard marine pollution emergency plan for noxious liquid substances required under this Regulation also applies to the ship, then both plans may be combined, and, if they are so combined, shall be called the “shipboard marine pollution emergency plan”.

## PART 8

### RECEPTION FACILITIES

#### *Reception facilities and cargo unloading terminal arrangements*

28. (1) Harbour authorities and persons having control of a harbour shall provide reception facilities according to the needs of ships using its ports, terminals or repair ports in accordance with this Regulation.

(2) Ports and terminals involved in ships' cargo handling shall have adequate facilities for the reception of residues and mixtures containing such residues of noxious liquid substances resulting from compliance with these Regulations, without undue delay for the ships involved.

(3) Ports, having ship repair facilities and undertaking repairs to NLS tankers, shall provide facilities adequate for the reception of residues and mixtures containing noxious liquid substances for ships calling at that port.

(4) The types of facilities provided for the purpose of paragraph (1) at each cargo loading and unloading port, terminal and ship repair port shall be to the satisfaction of the Minister.

(5) Harbour authorities and persons having control of cargo unloading terminals shall provide arrangements to facilitate stripping of cargo tanks of ships unloading noxious liquid substances at these terminals. Cargo hoses and piping systems of the terminal, containing noxious liquid substances received from ships unloading these substances at the terminal, shall not be drained back to the ship.

## PART 9

### REVOCATIONS

#### *Revocations*

29. The Sea Pollution (Control of Pollution by Noxious Liquid Substances in Bulk) Regulations 1994 (S.I. No. 46 of 1994) are revoked.

## SCHEDULE 1

Regulation 6

[Text of Appendix 1 to Annex II of the MARPOL Convention.]

**GUIDELINES FOR THE CATEGORIZATION OF NOXIOUS LIQUID SUBSTANCES\***

Products are assigned to Pollution Categories based on an evaluation of their properties as reflected in the resultant GESAMP Hazard Profile as shown in the table below:

Rule	A1 Bio-accumulation	A2 Bio-degradation	B1 Acute toxicity	B2 Chronic toxicity	D3 Long-term health effects	E2 Effects on marine wildlife and on benthic habitats	Cat
1			≥ 5				<b>X</b>
2	≥ 4		4				
3		NR	4				
4	≥ 4	NR			CMRTNI		
5			4				<b>Y</b>
6			3				
7			2				
8	≥ 4	NR		Not 0			
9				≥ 1			
10						Fp, F or S If not Inorganic	
11					CMRTNI		
12	Any product not meeting the criteria of rules 1 to 11 and 13						<b>Z</b>
13	All products identified as: >2 in column A1; R in column A2; blank in column D3; not Fp, F or S (if not organic) in column E2; and 0 (zero) in all other columns of the GESAMP Hazard Profile						<b>OS</b>

\*Reference is made to MEPC.1/Circ. 512 on the Revised Guidelines for the provisional assessment of liquid substances transported in bulk.

## Abbreviated legend to the revised GESAMP Hazard Evaluation Procedure

Columns A and B — Aquatic Environment					
Numerical Rating	A			B	
	Bioaccumulation and Biodegradation			Aquatic Toxicity	
	A 1* Bioaccumulation		A 2* Biodegradation	B 1* Acute Toxicity	B 2* Chronic Toxicity
	log P <sub>ow</sub>	BCF		LC/EC/IC <sub>50</sub> (mg/l)	NOEC (mg/l)
0	<1 or > ca. 7	not measurable	R: readily Biodegradable	>1000	>1
1	≥ 1 — <2	≥ 1 — <10	NR: not readily Biodegradable	>100 — >1000	>0.1 — >1
2	≥ 2 — <3	≥ 10 — <100		>10 — >100	>0.01 — >0.1
3	≥ 3 — <4	≥ 100 — <500	Inorg: inorganic substance	>1 — >10	>0.001 — >0.01
4	≥ 4 — <5	≥ 500 — <4000		>0.1 — >1	>0.001
5	≥ 5 — <ca.7	≥ 4000		>0.01 — >0.1	
6				>0.01	

Columns C and D — Human Health (Toxic effects to mammals)						
Numerical Ratings	C			D		
	Acute Mammalian Toxicity			Irritation, Corrosion & Long-term health effects		
	C 1 Oral Toxicity LD <sub>50</sub> (mg/kg)	C 2 Percutaneous Toxicity LD <sub>50</sub> (mg/kg)	C 3 Inhalation Toxicity LC <sub>50</sub> (mg/l)	D 1 Skin irritation & corrosion	D 2 Eye irritation & corrosion	D 3* Long-term health effects
0	>2000	>2000	>20	not irritating	not irritating	C - Carcinogen
1	>300 - >2000	>1000 - >2000	>10 - >20	mildly irritating	mildly irritating	M - Mutagenic
2	>50 - >300	>200 - >1000	>2 - >10	irritating	irritating	R - Reprotoxic
3	>5 - >50	>50 - >200	>0.5 - >2	Severely irritating or corrosive 3A Corr. (≤4hr) 3B Corr. (≤1hr) 3C Corr. (≤3min)	severely irritating	S - Sensitizing A - Aspiration hazard. T - Target organ systemic toxicity L - Lung injury N - Neurotoxic I - Immunotoxic
4	≤5	≤50	≤0.5			

**Abbreviated legend to the revised GESAMP Hazard Evaluation Procedure**  
(continued)

<b>Column E Interferences with other Uses of the Sea</b>			
<b>E 1</b> Tainting	<b>E 2*</b> Physical effects on Wildlife & benthic habitats	<b>E 3</b> Interference with Coastal Amenities	
		<b>Numerical Rating</b>	<b>Description &amp; Action</b>
NT: not tainting (tested) T: tainting test positive	Fp: Persistent Floater F: Floater S: Sinking Substances	0	no interference <b>no warning</b>
		1	slightly objectionable <b>warning, no closure of amenity</b>
		2	moderately objectionable <b>possible closure of amenity</b>
		3	highly objectionable <b>closure of amenity</b>

\*These columns are used to define Pollution Categories.

SCHEDULE 2

*[Text of Appendix 2 to Annex II of the MARPOL Convention.]*

**FORM OF CARGO RECORD BOOK FOR SHIPS CARRYING  
NOXIOUS LIQUID SUBSTANCES IN BULK**

CARGO RECORD BOOK FOR SHIPS CARRYING NOXIOUS LIQUID  
SUBSTANCES IN BULK

Name of ship .....

Distinctive number or letters .....

IMO Number .....

Gross tonnage .....

Period from .....to .....





## INTRODUCTION

The following pages show a comprehensive list of items of cargo and ballast operations which are, when appropriate, to be recorded in the Cargo Record Book on a tank to tank basis in accordance with regulation 15.2 of Annex II of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), as amended. The items have been grouped into operational sections, each of which is denoted by a letter.

When making entries in the Cargo Record Book, the date, operational code and item number shall be inserted in the appropriate columns and the required particulars shall be recorded chronologically in the blank spaces.

Each completed operation shall be signed for and dated by the officer or officers in charge and, if applicable, by a surveyor authorized by the competent authority of the State in which the ship is unloading. Each completed page shall be countersigned by the master of the ship.

### **List of items to be recorded**

Entries are required for operations involving all Categories of substances.

#### **(A) Loading of cargo**

- 1 Place of loading.
- 2 Identify tank(s), name of substance(s) and Category(ies).

#### **(B) Internal transfer of cargo**

- 3 Name and Category of cargo(es) transferred.
- 4 Identity of tanks:
  - .1 from:
  - .2 to:
- 5 Was (were) tank(s) in 4.1 emptied?
- 6 If not, quantity remaining in tank(s).

#### **(C) Unloading of cargo**

- 7 Place of unloading.
- 8 Identity of tank(s) unloaded.
- 9 Was (were) tank(s) emptied?
  - .1 If yes, confirm that the procedure for emptying and stripping has been performed in accordance with the ship's Procedures and Arrangements Manual (i.e. list, trim, stripping temperature).
  - .2 If not, quantity remaining in tank(s).
- 10 Does the ship's Procedures and Arrangements Manual require a pre-wash with subsequent disposal to reception facilities?
- 11 Failure of pumping and/or stripping system:
  - .1 time and nature of failure;
  - .2 reasons for failure;
  - .3 time when system has been made operational.

#### **(D) Mandatory prewash in accordance with the ship's Procedures and Arrangements Manual**

- 12 Identify tank(s), substance(s) and Category(ies).

## 13 Washing method:

- .1 number of cleaning machines per tank;
- .2 duration of wash/washing cycles;
- .3 hot/cold wash.

## 14 Prewash slops transferred to:

- .1 reception facility in unloading port (identify port)\*;
- .2 reception facility otherwise (identify port)\*.

**(E) Cleaning of cargo tanks except mandatory prewash (other prewash operations, final wash, ventilation etc.)**

## 15 State time, identify tank(s), substance(s) and Category(ies) and state:

- .1 washing procedure used;
- .2 cleaning agent(s) (identify agent(s) and quantities);
- .3 ventilation procedure used (state number of fans used, duration of ventilation).

## 16 Tank washings transferred:

- .1 into the sea;
- .2 to reception facility (identify port)\*;
- .3 to slops collecting tank (identify tank).

**(F) Discharge into the sea of tank washings**

## 17 Identify tank(s):

- .1 Were tank washings discharged during cleaning of tank(s)? If so at what rate?
- .2 Were tank washing(s) discharged from a slops collecting tank? If so, state quantity and rate of discharge.

## 18 Time pumping commenced and stopped.

## 19 Ship's speed during discharge.

\*Ships' masters should obtain from the operator of the reception facilities, which include barges and tank trucks, a receipt or certificate specifying the quantity of tank washings transferred, together with the time and date of the transfer. The receipt or certificate should be kept together with the cargo record book.

**(G) Ballasting of cargo tanks**

- 20 Identity of tank(s) ballasted.
- 21 Time at start of ballasting.

**(H) Discharge of ballast water from cargo tanks**

- 22 Identity of tank(s).
- 23 Discharge of ballast:
  - .1 into the sea;
  - .2 to reception facilities (identify port)\*.
- 24 Time ballast discharge commenced and stopped.
- 25 Ship's speed during discharge.

**(I) Accidental or other exceptional discharge**

- 26 Time of occurrence.
- 27 Approximate quantity, substance(s) and Category(ies).
- 28 Circumstances of discharge or escape and general remarks.

**(J) Control by authorized surveyors**

- 29 Identify port.
- 30 Identify tank(s), substance(s), Category(ies) discharged ashore.
- 31 Have tank(s), pump(s), and piping system(s) been emptied?
- 32 Has a prewash in accordance with the ship's Procedures and Arrangements Manual been carried out?
- 33 Have tank washings resulting from the prewash been discharged ashore and is the tank empty?
- 34 An exemption has been granted from mandatory prewash.
- 35 Reasons for exemption.
- 36 Name and signature of authorized surveyor.
- 37 Organization, company, government agency for which surveyor works.

\*Ships' masters should obtain from the operator of the reception facilities, which include barges and tank trucks, a receipt or certificate specifying the quantity of tank washings transferred, together with the time and date of the transfer. The receipt or certificate should be kept together with the cargo record book.



SCHEDULE 3

Regulation 9

*[Text of Appendix 3 to Annex II of the MARPOL Convention.]*

**FORM OF INTERNATIONAL POLLUTION PREVENTION  
CERTIFICATE FOR THE CARRIAGE OF NOXIOUS LIQUID  
SUBSTANCES IN BULK\***

**INTERNATIONAL POLLUTION PREVENTION CERTIFICATE FOR  
THE CARRIAGE OF NOXIOUS LIQUID SUBSTANCES IN BULK**

Issued under the provisions of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (hereinafter referred to as “the Convention”) under the authority of the Government of:

*(full designation of the country)*

by .....  
*(full designation of the competent person or organization authorized under the provisions of the Convention)*

**Particulars of ship**

Name of ship .....

Distinctive number or letters .....

IMO Number † .....

Port of registry .....

Gross tonnage .....

**THIS IS TO CERTIFY:**

- 1 That the ship has been surveyed in accordance with regulation 8 of Annex II of the Convention.
- 2 That the survey showed that the structure, equipment, systems, fitting, arrangements and material of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the applicable requirements of Annex II of the Convention.

\*The NLS Certificate shall be at least in English, French or Spanish. Where entries in an official national language of the State whose flag the ship is entitled to fly are also used, this shall prevail in case of a dispute or discrepancy.

†Refer to the IMO Ship Identification Number Scheme adopted by the Organization by resolution A.600(15).

- 3 That the ship has been provided with a Procedures and Arrangements Manual as required by regulation 14 of Annex II of the Convention, and that the arrangements and equipment of the ship prescribed in the Manual are in all respects satisfactory.
- 4 That the ship complies with the requirements of Annex II to MARPOL 73/78 for the carriage in bulk of the following Noxious Liquid Substances, provided that all relevant provisions of Annex II are observed.

Noxious Liquid Substances	Conditions of carriage (tank numbers etc.)	Pollution Category
Continued on additional signed and dated sheets		

This certificate is valid until (dd/mm/yyyy):..... subject to surveys in accordance with regulation 8 of Annex II of the Convention.

Completion date of the survey on which this certificate is based (dd/mm/yyyy):

Issued at .....

*(Place of issue of certificate)*

(dd/mm/yyyy):.....

*(Date of issue)*

.....

*(Signature of duly authorized official  
issuing the certificate)*

*(Seal or stamp of the authority, as appropriate)*



**ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS**

THIS IS TO CERTIFY that, at a survey required by regulation 8 of Annex II of the Convention, the ship was found to comply with the relevant provisions of the Convention:

Annual survey: Signed:.....  
(Signature of duly authorized official)  
Place:.....  
Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

Annual/Intermediate\* survey: Signed:.....  
(Signature of duly authorized official)  
Place:.....  
Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

Annual/Intermediate\* survey: Signed:.....  
(Signature of duly authorized official)  
Place:.....  
Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

Annual survey: Signed:.....  
(Signature of duly authorized official)  
Place:.....  
Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

---

\*Delete as appropriate.

**ANNUAL/INTERMEDIATE SURVEY IN ACCORDANCE WITH  
REGULATION 10.8.3**

THIS IS TO CERTIFY that, at an annual/intermediate\* survey in accordance with regulation 10.8.3 of Annex II of the Convention, the ship was found to comply with the relevant provisions of the Convention:

Signed:.....  
(Signature of duly authorized official)

Place:.....

Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

**ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR  
LESS THAN 5 YEARS WHERE REGULATION 10.3 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 10.3 of Annex II of the Convention, be accepted as valid until Date (dd/mm/yyyy): .....

Signed:.....  
(Signature of duly authorized official)

Place:.....

Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

**ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN  
COMPLETED AND REGULATION 10.4 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 10.4 of Annex II of the Convention, be accepted as valid until Date(dd/mm/yyyy): .....

Signed:.....  
(Signature of duly authorized official)

Place:.....

Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

---

\*Delete as appropriate.

**ENDORSEMENT TO EXTEND THE VALIDITY OF THE  
CERTIFICATE UNTIL REACHING THE PORT OF SURVEY OR FOR  
A PERIOD OF GRACE WHERE REGULATION 10.5 OR 10.6 APPLIES**

This Certificate shall, in accordance with regulation 10.5 or 10.6 of Annex II of the Convention, be accepted as valid until (dd/mm/yyyy): .....

Signed:.....  
*(Signature of duly authorized official)*

Place:.....

Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

**ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE  
WHERE REGULATION 10.8 APPLIES**

In accordance with regulation 10.8 of Annex II of the Convention, the new anniversary date is (dd/mm/yyyy): .....

Signed:.....  
*(Signature of duly authorized official)*

Place:.....

Date(dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

In accordance with regulation 10.8 of Annex II of the Convention, the new anniversary date is (dd/mm/yyyy): .....

Signed:.....  
*(Signature of duly authorized official)*

Place:.....

Date (dd/mm/yyyy):.....

*(Seal or stamp of the authority, as appropriate)*

*[Text of Appendix 4 to Annex II of the MARPOL Convention.]*

**STANDARD FORMAT FOR THE PROCEDURES AND  
ARRANGEMENTS MANUAL**

*Note 1:* The format consists of a standardized introduction and index of the leading paragraphs to each section. This standardized part shall be reproduced in the Manual of each ship. It shall be followed by the contents of each section as prepared for the particular ship. When a section is not applicable, "NA" shall be entered, so as not to lead to any disruption of the numbering as required by the standard format. Where the paragraphs of the standard format are printed in *italics*, the required information shall be described for that particular ship. The contents will vary from ship to ship because of design, trade and intended cargoes. Where the text is not in italics, that text of the standard format shall be copied into the Manual without any modification.

*Note 2:* If the Administration requires or accepts information and operational instructions in addition to those outlined in this Standard Format, they shall be included in Addendum D of the Manual.

**STANDARD FORMAT**

MARPOL 73/78 ANNEX II

PROCEDURES AND ARRANGEMENTS MANUAL

Name of ship: .....

Distinctive number or letters: .....

IMO Number:.....

Port of registry: .....

Approval stamp of Administration:

## INTRODUCTION

1 The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as MARPOL 73/78) was established in order to prevent the pollution of the marine environment by discharges into the sea from ships of harmful substances or effluents containing such substances. In order to achieve its aim, MARPOL 73/78 contains six Annexes in which detailed regulations are given with respect to the handling on board ships and the discharge into the sea or release into the atmosphere of six main groups of harmful substances, i.e. Annex I (Mineral oils), Annex II (Noxious liquid substances carried in bulk), Annex III (Harmful substances carried in packaged form), Annex IV (Sewage), Annex V (Garbage) and Annex VI (Air pollution).

2 Regulation 13 of Annex II of MARPOL 73/78 (hereinafter referred to as “Annex II”) prohibits the discharge into the sea of noxious liquid substances of Categories X, Y or Z or of ballast water, tank washings or other residues or mixtures containing such substances, except in compliance with specified conditions including procedures and arrangements based upon standards developed by the International Maritime Organization (IMO) to ensure that the criteria specified for each Category will be met.

3 Annex II requires that each ship which is certified for the carriage of noxious liquid substances in bulk shall be provided with a Procedures and Arrangements Manual, hereinafter referred to as the “Manual”.

4 This Manual has been written in accordance with Regulation 14 of Annex II and is concerned with the marine environmental aspects of the cleaning of cargo tanks and the discharge of residues and mixtures from these operations. The Manual is not a safety guide and reference shall be made to other publications specifically to evaluate safety hazards.

5 The purpose of the Manual is to identify the arrangements and equipment required to enable compliance with Annex II and to identify for the ship’s officers all operational procedures with respect to cargo handling, tank cleaning, slops handling, residue discharging, ballasting and deballasting, which must be followed in order to comply with the requirements of Annex II.

6 In addition, this Manual, together with the ship’s Cargo Record Book and the Certificate issued under Annex II\*, will be used by Administrations for control purposes in order to ensure full compliance with the requirements of Annex II by this ship.

7 The master shall ensure that no discharges into the sea of cargo residues or residue/water mixtures containing Category X, Y or Z substances shall take

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\*Include only the Certificate issued to the particular ship: i.e. the International Pollution Prevention Certificate for the carriage of Noxious Liquid Substances in bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk.

place, unless such discharges are made in full compliance with the operational procedures contained in this Manual.

8 This Manual has been approved by the Administration and no alteration or revision shall be made to any part of it without the prior approval of the Administration.

**INDEX OF SECTIONS**

- 1 Main features of MARPOL 73/78, Annex II
- 2 Description of the ship's equipment and arrangements
- 3 Cargo unloading procedures and tank stripping
- 4 Procedures relating to the cleaning of cargo tanks, the discharge of residues, ballasting and deballasting
- 5 Information and procedures



**SECTION 1 — Main features of MARPOL 73/78, Annex II**

1.1 The requirements of Annex II apply to all ships carrying noxious liquid substances in bulk. Substances posing a threat of harm to the marine environment are divided into three Categories, X, Y and Z. Category X substances are those posing the greatest threat to the marine environment, whilst Category Z substances are those posing the smallest threat.

1.2 Annex II prohibits the discharge into the sea of any effluent containing substances falling under these categories, except when the discharge is made under conditions which are specified in detail for each Category. These conditions include, where applicable, such parameters as:

- .1 the maximum quantity of substances per tank which may be discharged into the sea;
- .2 the speed of the ship during the discharge;
- .3 the minimum distance from the nearest land during discharge;
- .4 the minimum depth of water at sea during discharge; and
- .5 the need to effect the discharge below the waterline.

1.3 For certain sea areas identified as “special area” more stringent discharge criteria apply. Under Annex II the special area is the Antarctic area.

1.4 Annex II requires that every ship is provided with pumping and piping arrangements to ensure that each tank designated for the carriage of Category X, Y and Z substances does not retain after unloading a quantity of residue in excess of the quantity given in the Annex. For each tank intended for the carriage of such substances an assessment of the residue quantity has to be made. Only when the residue quantity as assessed is less than the quantity prescribed by the Annex may a tank be approved for the carriage of a Category X, Y or Z substance.

1.5 In addition to the conditions referred to above, an important requirement contained in Annex II is that the discharge operations of certain cargo residues and certain tank cleaning and ventilation operations may only be carried out in accordance with approved procedures and arrangements.

1.6 To enable the requirement of paragraph 1.5 to be met, this Manual contains in section 2 all particulars of the ship’s equipment and arrangements, in section 3 operational procedures for cargo unloading and tank stripping and in section 4 procedures for discharge of cargo residues, tank washing, slops collection, ballasting and deballasting as may be applicable to the substances the ship is certified to carry.

1.7 By following the procedures as set out in this Manual, it will be ensured that the ship complies with all relevant requirements of Annex II to MARPOL 73/78.

**SECTION 2 — Description of the ship's equipment and arrangements**

2.1 This section contains all particulars of the ship's equipment and arrangements necessary to enable the crew to follow the operational procedures set out in sections 3 and 4.

**2.2 General arrangement of ship and description of cargo tanks**

*This section shall contain a brief description of the cargo area of the ship with the main features of the cargo tanks and their positions.*

*Line or schematic drawings showing the general arrangement of the ship and indicating the position and numbering of the cargo tanks and heating arrangements shall be included.*

**2.3 Description of cargo pumping and piping arrangements and stripping system**

*This section shall contain a description of the cargo pumping and piping arrangements and of the stripping system. Line or schematic drawings shall be provided showing the following and be supported by textual explanation where necessary:*

- .1 cargo piping arrangements with diameters;*
- .2 Cargo pumping arrangements with pump capacities;*
- .3 piping arrangements of stripping system with diameters;*
- .4 pumping arrangements of stripping system with pump capacities;*
- .5 location of suction points of cargo lines and stripping lines inside every cargo tank;*
- .6 if a suction well is fitted, the location and cubic capacity thereof;*
- .7 line draining and stripping or blowing arrangements; and*
- .8 quantity and pressure of nitrogen or air required for line blowing if applicable.*

**2.4 Description of ballast tanks and ballast pumping and piping arrangements**

*This section shall contain a description of the ballast tanks and ballast pumping and piping arrangements.*

*Line or schematic drawings and tables shall be provided showing the following:*

- .1 a general arrangement showing the segregated ballast tanks and cargo tanks to be used as ballast tanks together with their capacities (cubic metres);*

- .2 ballast piping arrangement;
- .3 pumping capacity for those cargo tanks which may also be used as ballast tanks; and
- .4 any interconnection between the ballast piping arrangements and the underwater outlet system.

## **2.5 Description of dedicated slop tanks with associated pumping and piping arrangements**

*This section shall contain a description of the dedicated slop tank(s), if any, with the associated pumping and piping arrangements. Line or schematic drawings shall be provided showing the following:*

- .1 which dedicated slop tanks are provided together with the capacities of such tanks;
- .2 pumping and piping arrangements of dedicated slop tanks with piping diameters and their connection with the underwater discharge outlet.

## **2.6 Description of underwater discharge outlet for effluents containing noxious liquid substances**

*This section shall contain information on position and maximum flow capacity of the underwater discharge outlet (or outlets) and the connections to this outlet from the cargo tanks and slop tanks. Line or schematic drawings shall be provided showing the following:*

- .1 location and number of underwater discharge outlets;
- .2 connections to underwater discharge outlet;
- .3 location of all seawater intakes in relation to underwater discharge outlets.

## **2.7 Description of flow rate indicating and recording devices**

[Deleted]

## **2.8 Description of cargo tank ventilation system**

*This section shall contain a description of the cargo tank ventilation system.*

*Line or schematic drawings and tables shall be provided showing the following and supported by textual explanation if necessary:*

- .1 the noxious liquid substances the ship is certified fit to carry having a vapour pressure over 5 kPa at 20°C suitable for cleaning by ventilation to be listed in paragraph 4.4.10 of the Manual;
- .2 ventilation piping and fans;

- .3 *positions of the ventilation openings;*
- .4 *the minimum flow rate of the ventilation system to adequately ventilate the bottom and all parts of the cargo tank;*
- .5 *the location of structures inside the tank affecting ventilation;*
- .6 *the method of ventilating the cargo pipeline system, pumps, filters, etc; and*
- .7 *means for ensuring that the tank is dry.*

## **2.9 Description of tank washing arrangements and wash water heating system**

*This section shall contain a description of the cargo tank washing arrangements, wash water heating system and all necessary tank washing equipment.*

*Line or schematic drawings and tables or charts shall be provided showing the following:*

- .1 *arrangements of piping dedicated for tank washing with pipeline diameters;*
- .2 *type of tank cleaning machines with capacities and pressure rating;*
- .3 *maximum number of tank cleaning machines which can operate simultaneously;*
- .4 *position of deck openings for cargo tank washing;*
- .5 *the number of cleaning machines and their location required for ensuring complete coverage of the cargo tank walls;*
- .6 *maximum capacity of wash water which can be heated to 60°C by the installed heating equipment; and*
- .7 *maximum number of tank cleaning machines which can be operated simultaneously at 60°C.*

## **SECTION 3 — Cargo unloading procedures and tank stripping**

3.1 This section contains operational procedures in respect of cargo unloading and tank stripping which must be followed in order to ensure compliance with the requirements of Annex II.

### **3.2 Cargo unloading**

*This section shall contain procedures to be followed including the pump and cargo unloading and suction line to be used for each tank. Alternative methods may be given.*

*The method of operation of the pump or pumps and the sequence of operation of all valves shall be given.*

*The basic requirement is to unload the cargo to the maximum extent.*

### **3.3 Cargo tank stripping**

*This section shall contain procedures to be followed during the stripping of each cargo tank.*

*The procedures shall include the following:*

- .1 operation of stripping system;*
- .2 list and trim requirements;*
- .3 line draining and stripping or blowing arrangements if applicable; and*
- .4 duration of the stripping time of the water test.*

### **3.4 Cargo temperature**

*This section shall contain information on the heating requirements of cargoes which have been identified as being required to be at a certain minimum temperature during unloading.*

*Information shall be given on control of the heating system and the method of temperature measurement.*

### **3.5 Procedures to be followed when a cargo tank cannot be unloaded in accordance with the required procedures**

*This section shall contain information on the procedures to be followed in the event that the requirements contained in sections 3.3 and/or 3.4 cannot be met due to circumstances such as the following:*

- .1 failure of cargo tank stripping system; and*
- .2 failure of cargo tank heating system.*

### **3.6 Cargo Record Book**

The Cargo Record Book shall be completed in the appropriate places on completion of any cargo operation.

**SECTION 4 — Procedures relating to the cleaning of cargo tanks, the discharge of residues, ballasting and deballasting**

4.1 This section contains operational procedures in respect of tank cleaning, ballast and slops handling which must be followed in order to ensure compliance with the requirements of Annex II.

4.2 The following paragraphs outline the sequence of actions to be taken and contain the information essential to ensure that noxious liquid substances are discharged without posing a threat of harm to the marine environment.

4.3 [Deleted]

4.4 The information necessary to establish the procedures for discharging the residue of the cargo, cleaning, ballasting and deballasting the tank, shall take into account the following:

**.1 Category of substance**

The Category of the substance should be obtained from the relevant Certificate.

**.2 Stripping efficiency of tank pumping system**

*The contents of this section will depend on the design of the ship and whether it is a new ship or existing ship (See flow diagram and pumping/stripping requirements).*

**.3 Vessel within or outside special area**

*This section shall contain instructions on whether the tank washings can be discharged into the sea within a special area (as defined in section 1.3) or outside a special area. The different requirements shall be made clear and will depend on the design and trade of the ship.*

No discharges into the sea of residues of noxious liquid substances, or mixtures containing such substances, are allowed within the Antarctic area (the sea area south of latitude 60°S).

**.4 Solidifying or high-viscosity substance**

*The properties of the substance should be obtained from the shipping document.*

**.5 Miscibility with water**

[Deleted]

**.6 Compatibility with slops containing other substances**

*This section shall contain instructions on the permissible and non-permissible mixing of cargo slops. Reference should be made to compatibility guides.*

**.7 Discharge to reception facility**

*This section shall identify those substances the residues of which are required to be prewashed and discharged to a reception facility.*

**.8 Discharging into the sea**

*This section shall contain information on the factors to be considered in order to identify whether the residue/water mixtures are permitted to be discharged into the sea.*

**.9 Use of cleaning agents or additives**

*This section shall contain information on the use and disposal of cleaning agents (e.g. solvents used for tank cleaning) and additives to tank washing water (e.g. detergents).*

**.10 Use of ventilation procedures for tank cleaning**

*This section shall make reference to all substances suitable for the use of ventilation procedures.*

4.5 Having assessed the above information, the correct operational procedures to be followed should be identified using the instructions and flow diagram of section 5. Appropriate entries shall be made in the Cargo Record Book indicating the procedure adopted.

**SECTION 5 — Information and procedures**

*This section shall contain procedures, which will depend on the age of the ship and pumping efficiency. Examples of flow diagram referred to in this section are given at addendum A and incorporate comprehensive requirements applicable to both new and existing ships. The Manual for a particular ship shall only contain those requirements specifically applicable to that ship.*

Information relating to melting point and viscosity, for those substances which have a melting point equal to or greater than 0°C or a viscosity equal or greater than 50 mPa·s at 20°C, shall be obtained from the shipping document.

For substances allowed to be carried, reference is made to the relevant Certificate.

The Manual shall contain:

Table 1	:	[Deleted]
Table 2	:	Cargo tank information.
Addendum A	:	Flow diagram.
Addendum B	:	Prewash procedures.
Addendum C	:	Ventilation procedures.
Addendum D	:	Additional information and operational instructions when required or accepted by the Administration.

Outlines of the above table and addenda are shown below.

**Table 2 — Cargo tank information**

Tank no.*	Capacity (m <sup>3</sup> )	Stripping quantity (litres)

\*Tank numbers should be identical to those in the ship's Certificate of Fitness.



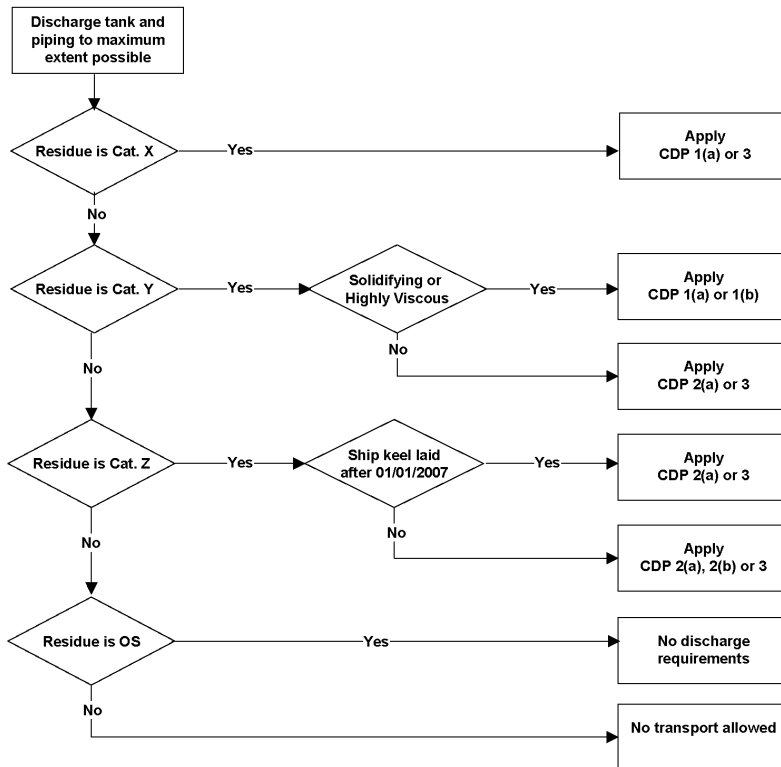
**Addendum A**

**Flow Diagrams — Cleaning of cargo tanks and disposal of tank washings/ballast containing residues of category X, Y, and Z substances**

Note 1: This flow diagram shows the basic requirements applicable to all age groups of ships and is for guidance only.

Note 2: All discharges into the sea are regulated by Annex II.

Note 3: Within the Antarctic area, any discharge into the sea of noxious liquid substances or mixtures containing such substances is prohibited.



Ship details	Stripping requirements (in litres)		
	Category X	Category Y	Category Z
New Ships: keel laid after 01/01/2007	75	75	75
IBC ships until 01/01/2007	100 + 50 tolerance	100 + 50 tolerance	300 + 50 tolerance
BCH ships	300 + 50 tolerance	300 + 50 tolerance	900 + 50 tolerance
Other ships: keel laid before 01/01/2007	N/A	N/A	Empty to the most possible extent

<b>Cleaning and disposal procedures (CDP)</b>						
(Start at the top of the column under the CDP number specified and complete each item procedure in the sequence where marked)						
<b>No.</b>	<b>Operation</b>	<b>Procedure Number</b>				
		<b>1(a)</b>	<b>1(b)</b>	<b>2(a)</b>	<b>2(b)</b>	<b>3</b>
1	Strip tank and piping to maximum extent, at least in compliance with the procedures in section 3 of this Manual	X	X	X	X	X
2	Apply prewash in accordance with Addendum B of this Manual and discharge residue to reception facility	X	X			
3	Apply subsequent wash, additional to the prewash, with: a complete cycle of the cleaning machine(s) <i>(for ships built before 1 July 1994)</i>  a water quantity not less than calculated with "k" <sub>1</sub> =1.0 <i>(for ships built on or after 1 July 1994)</i>		X			
4	Apply ventilation procedure in accordance with Addendum C of this Manual					X
5	Ballast tanks or wash tank to commercial standards	X		X	X	X
6	Ballast added to tank		X			
7	Conditions for discharge of ballast/residue/water mixtures other than prewash:					
	.1 distance from land > 12 nautical miles	X		X	X	
	.2 ship's speed > 7 knots	X		X	X	
	.3 water depth > 25 metres	X		X	X	
	.4 Using underwater discharge (not exceeding permissible discharge rate)	X		X		
8	Conditions for discharge of ballast:					
	.1 distance from land > 12 nautical miles		X			
	.2 water depth > 25 metres		X			
9	Any water subsequently introduced into a tank may be discharged into the sea without restrictions	X	X	X	X	X

## **Addendum B**

### **Prewash Procedures**

*This addendum to the Manual shall contain prewash procedures based on appendix 6 of Annex II. These procedures shall contain specific requirements for the use of the tank washing arrangements and equipment provided on the particular ship and include the following:*

- .1 cleaning machine positions to be used;*
- .2 slops pumping out procedure;*
- .3 requirements for hot washing;*
- .4 number of cycles of cleaning machine (or time); and*
- .5 minimum operating pressures.*

## **Addendum C**

### **Ventilation Procedures**

*This addendum to the Manual shall contain ventilation procedures based on appendix 7 of Annex II. The procedures shall contain specific requirements for the use of the cargo tank ventilation system, or equipment, fitted on the particular ship and shall include the following:*

- .1 ventilation positions to be used;*
- .2 minimum flow or speed of fans;*
- .3 procedures for ventilating cargo pipeline, pumps, filters, etc.; and*
- .4 procedures for ensuring that tanks are dry on completion.*

## **Addendum D**

### **Additional information and operational instructions required or accepted by the Administration**

*This addendum to the Manual shall contain additional information and operational instructions required or accepted by the Administration.*

*[Text of Appendix 5 to Annex II of the MARPOL Convention.]*

## **Assessment of residue quantities in cargo tanks, pumps and associated piping**

### **1 Introduction**

#### **1.1 Purpose**

1.1.1 The purpose of this appendix is to provide the procedure for testing the efficiency of cargo pumping systems.

#### **1.2 Background**

1.2.1 The ability of the pumping system of a tank to comply with regulation 12.1, 12.2 or 12.3 is determined by performing a test in accordance with the procedure set out in section 3 of this appendix. The quantity measured is termed the “stripping quantity”. The stripping quantity of each tank shall be recorded in the ship’s Manual.

1.2.2 After having determined the stripping quantity of one tank, the Administration may use the determined quantities for a similar tank, provided the Administration is satisfied that the pumping system in that tank is similar and operating properly.

### **2 Design criteria and performance test**

2.1 The cargo pumping systems should be designed to meet the required maximum amount of residue per tank and associated piping as specified in regulation 12 of Annex II to the satisfaction of the Administration.

2.2 In accordance with regulation 12.5 the cargo pumping systems shall be tested with water to prove their performance. Such water tests shall, by measurement, show that the system meets the requirements of regulation 12. In respect of regulations 12.1 and 12.2 a tolerance of 50 litres per tank is acceptable.

### **3 Water performance test**

#### **3.1 Test condition**

3.1.1 The ship’s trim and list shall be such as to provide favourable drainage to the suction point. During the water test the ship’s trim shall not exceed 3° by the stern, and the ship’s list shall not exceed 1°.

3.1.2 The trim and list chosen for the water test shall be recorded. This shall be the minimum favourable trim and list used during the water test.

3.1.3 During the water test means shall be provided to maintain a back-pressure of not less than 100 kPa at the cargo tank’s unloading manifold (see figures 5-1 and 5-2).

3.1.4 The time taken to complete the water test shall be recorded for each tank, recognizing that this may need to be amended as a result of subsequent tests.

### 3.2 Test procedure

3.2.1 Ensure that the cargo tank to be tested and its associated piping have been cleaned and that the cargo tank is safe for entry.

3.2.2 Fill the cargo tank with water to a depth necessary to carry out normal end of unloading procedures.

3.2.3 Discharge and strip water from the cargo tank and its associated piping in accordance with the proposed procedures.

3.2.4 Collect all water remaining in the cargo tank and its associated piping into a calibrated container for measurement. Water residues shall be collected, inter alia, from the following points:

- .1 the cargo tank suction and its vicinity;
- .2 any entrapped areas on the cargo tank bottom;
- .3 the low point drain of the cargo pump; and
- .4 all low point drains of piping associated with the cargo tank up to the manifold valve.

3.2.5 The total water volumes collected above determine the stripping quantity for the cargo tank.

3.2.6 Where a group of tanks is served by a common pump or piping, the water test residues associated with the common system(s) may be apportioned equally among the tanks provided that the following operational restriction is included in the ship's approved Manual: "For sequential unloading of tanks in this group, the pump or piping is not to be washed until all tanks in the group have been unloaded."

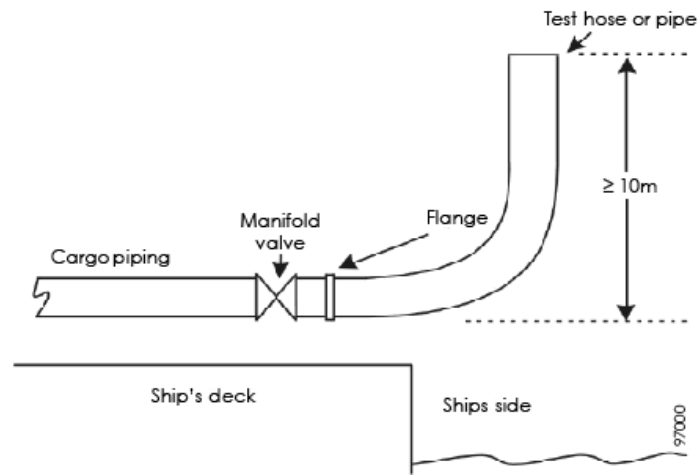


Figure 5-1

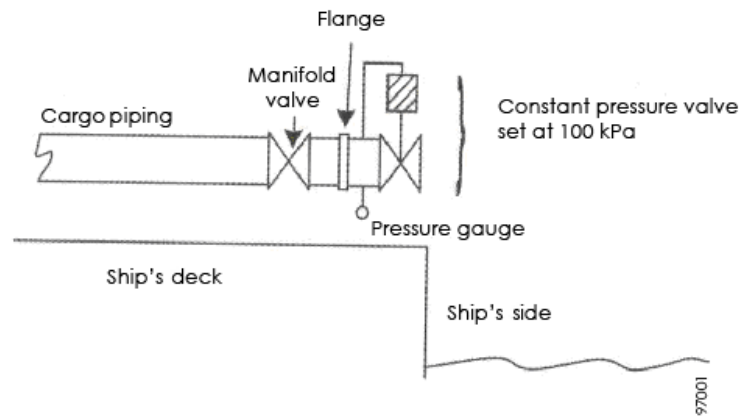


Figure 5-2

The above figures illustrate test arrangements that would provide a backpressure of not less than 100 kPa at the cargo tank's unloading manifold.

## SCHEDULE 6

Regulations 2, 4(3),  
19(4), 20(4), 21(2)

*[Text of Appendix 6 to Annex II of the MARPOL Convention.]*

**PREWASH PROCEDURES****A** *For ships built before 1 July 1994*

A prewash procedure is required in order to meet certain Annex II requirements. This appendix explains how these prewash procedures shall be performed.

**Prewash procedures for non-solidifying substances**

1 Tanks shall be washed by means of a rotary water jet, operated at sufficiently high water pressure. In the case of Category X substances cleaning machines shall be operated in such locations that all tank surfaces are washed. In the case of Category Y substances only one location need be used.

2 During washing, the amount of water in the tank shall be minimized by continuously pumping out slops and promoting flow to the suction point (positive list and trim). If this condition cannot be met, the washing procedure shall be repeated three times, with thorough stripping of the tank between washings.

3 Those substances which have a viscosity equal to or greater than 50 mPa·s at 20°C shall be washed with hot water (temperature at least 60°C), unless the properties of such substances make the washing less effective.

4 The number of cycles of the cleaning machine used shall not be less than that specified in table 6-1. A cleaning machine cycle is defined as the period between two consecutive identical orientations of the tank cleaning machine (rotation through 360°).

5 After washing, the tank cleaning machine(s) shall be kept operating long enough to flush the pipeline, pump and filter, and discharge to shore reception facilities shall be continued until the tank is empty.

**Prewash procedures for solidifying substances**

1 Tanks shall be washed as soon as possible after unloading. If possible, tanks shall be heated prior to washing.

2 Residues in hatches and manholes shall preferably be removed prior to the prewash.

3 Tanks shall be washed by means of a rotary water jet operated at sufficiently high water pressure and in locations to ensure that all tank surfaces are washed.

4 During washing the amount of water in the tank shall be minimized by pumping out slops continuously and promoting flow to the suction point (positive list and trim). If this condition cannot be met, the washing procedure shall be repeated three times with thorough stripping of the tank between washings.

5 Tanks shall be washed with hot water (temperature at least 60°C) unless the properties of such substances make the washing less effective.

6 The number of cycles of the cleaning machine used shall not be less than that specified in table 6-1. A cleaning machine cycle is defined as the period between two consecutive identical orientations of the machine (rotation through 360°).

7 After washing, the cleaning machine(s) shall be kept operating long enough to flush the pipeline, pump and filter, and discharge to shore reception facilities shall be continued until the tank is empty.

**Table 6-1 — Number of cleaning machine cycles to be used in each location**

Category of substance	Number of cleaning machine cycles	
	Non-solidifying substances	Solidifying substances
Category X	1	2
Category Y	1/2	1

**B** *For ships built on or after 1 July 1994 and recommendatory for ships built before 1 July 1994*

A prewash procedure is required in order to meet certain Annex II requirements. This appendix explains how these prewash procedures shall be performed and how the minimum volumes of washing media to be used shall be determined. Smaller volumes of washing media may be used based on actual verification testing to the satisfaction of the Administration. Where reduced volumes are approved, an entry to that effect must be recorded in the Manual.

If a medium other than water is used for the prewash, the provisions of regulation 13.5.1 apply.

#### **Prewash procedures for non-solidifying substances without recycling**

1 Tanks shall be washed by means of a rotary jet(s), operated at sufficiently high water pressure. In the case of Category X substances cleaning machines shall be operated in such locations that all tank surfaces are washed. In the case of Category Y substances only one location need be used.

2 During washing the amount of liquid in the tank shall be minimized by continuously pumping out slops and promoting flow to the suction point. If this condition cannot be met, the washing procedure shall be repeated three times, with thorough stripping of the tank between washings.



- 3 Those substances which have a viscosity equal to or greater than 50 mPa·s at 20°C shall be washed with hot water (temperature at least 60°C), unless the properties of such substances make the washing less effective.
- 4 The quantities of wash water used shall not be less than those specified in paragraph 20 or determined according to paragraph 21.
- 5 After prewashing the tanks and lines shall be thoroughly stripped.

**Prewash procedures for solidifying substances without recycling**

- 6 Tanks shall be washed as soon as possible after unloading. If possible, tanks should be heated prior to washing.
- 7 Residues in hatches and manholes should preferably be removed prior to the prewash.
- 8 Tanks shall be washed by means of a rotary jet(s) operated at sufficiently high water pressure and in locations to ensure that all tank surfaces are washed.
- 9 During washing the amount of liquid in the tank shall be minimized by pumping out slops continuously and promoting flow to the suction point. If this condition cannot be met, the washing procedure shall be repeated three times with thorough stripping of the tank between washings.
- 10 Tanks shall be washed with hot water (temperature at least 60°C), unless the properties of such substances make the washing less effective.
- 11 The quantities of wash water used shall not be less than those specified in paragraph 20 or determined according to paragraph 21.
- 12 After prewashing the tanks and lines shall be thoroughly stripped.

**Prewash procedures with recycling of washing medium**

- 13 Washing with a recycled washing medium may be adopted for the purpose of washing more than one cargo tank. In determining the quantity, due regard must be given to the expected amount of residues in the tanks and the properties of the washing medium and whether any initial rinse or flushing is employed. Unless sufficient data are provided, the calculated end concentration of cargo residues in the washing medium shall not exceed 5% based on nominal stripping quantities.
- 14 The recycled washing medium shall only be used for washing tanks having contained the same or similar substance.
- 15 A quantity of washing medium sufficient to allow continuous washing shall be added to the tank or tanks to be washed.

16 All tank surfaces shall be washed by means of a rotary jet(s) operated at sufficiently high pressure. The recycling of the washing medium may either be within the tank to be washed or via another tank, e.g. a slop tank.

17 The washing shall be continued until the accumulated throughput is not less than that corresponding to the relevant quantities given in paragraph 20 or determined according to paragraph 21.

18 Solidifying substances and substances with viscosity equal to or greater than 50 mPa·s at 20°C shall be washed with hot water (temperature at least 60°C) when water is used as the washing medium, unless the properties of such substances make the washing less effective.

19 After completing the tank washing with recycling to the extent specified in paragraph 17, the washing medium shall be discharged and the tank thoroughly stripped. Thereafter, the tank shall be subjected to a rinse, using clean washing medium, with continuous drainage and discharged to a reception facility. The rinse shall as a minimum cover the tank bottom and be sufficient to flush the pipelines, pump and filter.

#### **Minimum quantity of water to be used in a prewash**

20 The minimum quantity of water to be used in a prewash is determined by the residual quantity of noxious liquid substance in the tank, the tank size, the cargo properties, the permitted concentration in any subsequent wash water effluent, and the area of operation. The minimum quantity is given by the following formula:

$$Q = k(15r^{0.8} + 5r^{0.7} \times V/1000)$$

where

$Q$  = the required minimum quantity in cubic metres

$r$  = the residual quantity per tank in cubic metres. The value of  $r$  shall be the value demonstrated in the actual stripping efficiency test, but shall not be taken lower than 0.100 m<sup>3</sup> for a tank volume of 500 m<sup>3</sup> and above and 0.040 m<sup>3</sup> for a tank volume of 100 m<sup>3</sup> and below. For tank sizes between 100 m<sup>3</sup> and 500 m<sup>3</sup> the minimum value of  $r$  allowed to be used in the calculations is obtained by linear interpolation.

For Category X substances the value of  $r$  shall either be determined based on stripping tests according to the Manual, observing the lower limits as given above, or be taken to be 0.9 m<sup>3</sup>.

$V$  = tank volume in cubic metres

$k$  = a factor having values as follows:

Category X, non-solidifying, low-viscosity substance,  $k = 1.2$

Category X, solidifying or high-viscosity substance,  $k = 2.4$

Category Y, non-solidifying, low-viscosity substance,  $k = 0.5$

Category Y, solidifying or high-viscosity substance,  $k = 1.0$

The table below is calculated using the formula with a  $k$  factor of 1 and may be used as an easy reference.

Stripping quantity (m <sup>3</sup> )	Tank volume (m <sup>3</sup> )		
	100	500	3000
>0.04	1.2	2.9	5.4
0.10	2.5	2.9	5.4
0.30	5.9	6.8	12.2
0.90	14.3	16.1	27.7

21 Verification testing for approval of prewash volumes lower than those given in paragraph 20 may be carried out to the satisfaction of the Administration to prove that the requirements of regulation 13 are met, taking into account the substances the ship is certified to carry. The prewash volume so verified shall be adjusted for other prewash conditions by application of the factor  $k$  as defined in paragraph 20.

[Text of Appendix 7 to Annex II of the MARPOL Convention.]

### VENTILATION PROCEDURES

- 1 Cargo residues of substances with a vapour pressure greater than 5 kPa at 20°C may be removed from a cargo tank by ventilation.
- 2 Before residues of noxious liquid substances are ventilated from a tank, the safety hazards relating to cargo flammability and toxicity shall be considered. With regard to safety aspects, the operational requirements for openings in cargo tanks in SOLAS 74, as amended, the International Bulk Chemical Code, the Bulk Chemical Code, and the ventilation procedures in the International Chamber of Shipping (ICS) *Tanker Safety Guide (Chemicals)* should be consulted.
- 3 Port authorities may also have regulations on cargo tank ventilation.
- 4 The procedures for ventilation of cargo residues from a tank are as follows:
  - .1 the pipelines shall be drained and further cleared of liquid by means of ventilation equipment;
  - .2 the list and trim shall be adjusted to the minimum levels possible so that evaporation of residues in the tank is enhanced;
  - .3 ventilation equipment producing an airjet which can reach the tank bottom shall be used. Figure 7-1 could be used to evaluate the adequacy of ventilation equipment used for ventilating a tank of a given depth;
  - .4 ventilation equipment shall be placed in the tank opening closest to the tank sump or suction point;
  - .5 ventilation equipment shall, when practicable, be positioned so that the airjet is directed at the tank sump or suction point and impingement of the airjet on tank structural members is to be avoided as much as possible; and
  - .6 ventilation shall continue until no visible remains of liquid can be observed in the tank. This shall be verified by a visual examination or an equivalent method.

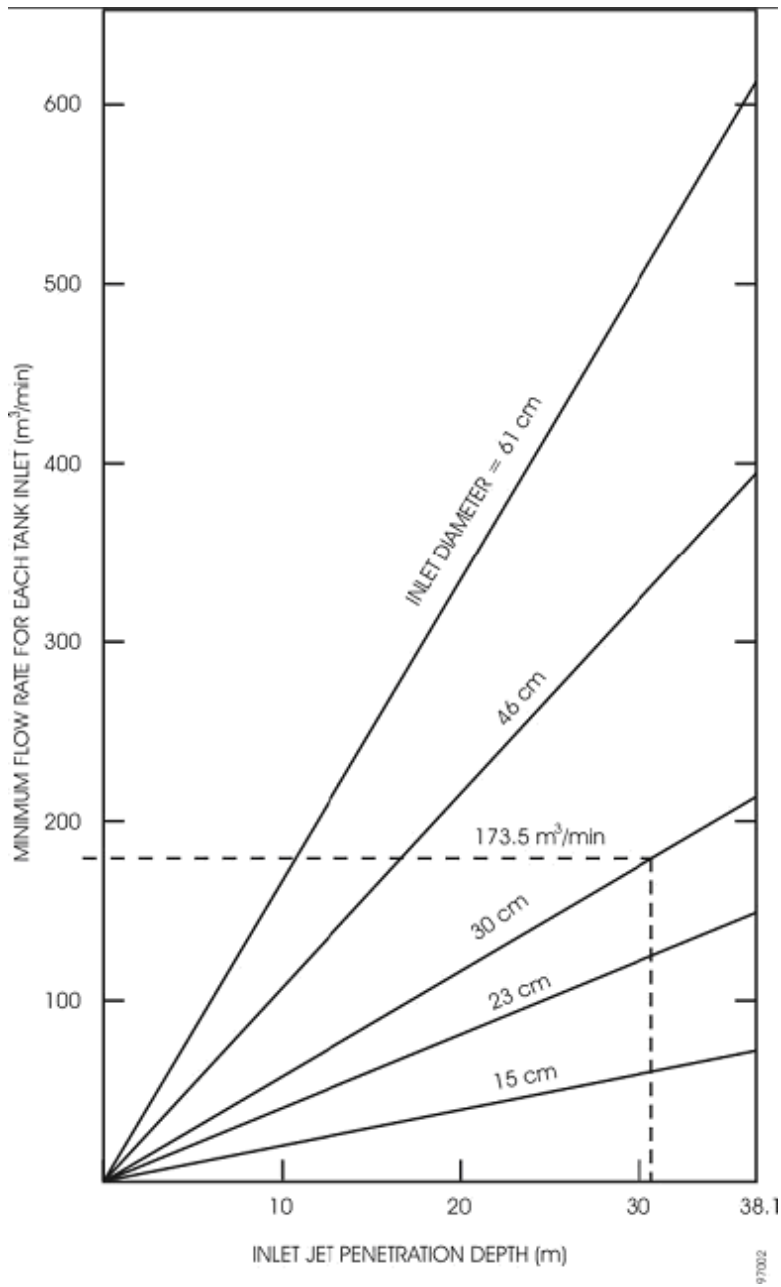
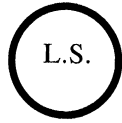


Figure 7-1. Minimum flow rate as a function of jet penetration depth.

Jet penetration depth shall be compared against tank height.



GIVEN under my Official Seal,  
4 June 2008

NOEL DEMPSEY.  
Minister for Transport.

## EXPLANATORY NOTE

*(This note is not part of the Instrument and does not purport to be a legal interpretation.)*

These Regulations give effect to Annex II of the International Convention for the Prevention of Pollution from Ships, adopted by the International Maritime Organization on 2 November, 1973 and as amended by its Protocol adopted by the International Maritime Organization on 17 February, 1978 and as further amended under resolutions adopted by the Marine Environment Protection Committee (MEPC) of the International Maritime Organization.

The Regulations apply to all Irish ships wherever they may be and to all other ships when they are in Irish waters.

Noxious liquid substances are divided into four categories, *X*, *Y*, *Z*, and *Other Substances*, according to the severity of the hazard which they present to human health and the marine environment, Category *X* presenting the worst hazard and Category *Other Substances* the least. Under the Regulations, discharges into the sea of these substances or mixtures of them are prohibited except when the discharges are made under specified conditions. These conditions vary according to the degree of hazard posed to the marine environment. Discharges are prohibited in the Antarctic area.

The Regulations require ships to follow specified procedures when washing cargo tanks in accordance with the category of the substance. They also provide for adequate facilities at ports, terminals or repair ports for the reception of residues or mixtures of noxious liquid substances.

Under the Regulations, ships are required to be surveyed, to carry an International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk, and to be maintained in accordance with that Certificate. Ships are also required to carry a Cargo Record Book in which to record operations involving cargoes of noxious liquid substances.

Section 29 of the Sea Pollution Act, 1991 provides for penalties for breaches of these Regulations.

These Regulations revoke the Sea Pollution (Control of Pollution by Noxious Liquid Substances in Bulk) Regulations, 1994 (S.I. No. 46 of 1994).

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