

International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code)

1993 Edition

Supplement

The following amendments were adopted by resolution MSC.32(63) on 23 May 1994 and entered into force on 1 July 1998:

Amendments related to application

1 Existing paragraphs 1.1.2 and 1.1.3 are replaced by the following:

“**1.1.2** Unless expressly provided otherwise, the Code applies to ships the keels of which are laid or which are at a stage at which:

- .1** construction identifiable with the ship begins; and
- .2** assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is the less;

on or after 1 July 1998. Ships constructed before 1 July 1998 are to comply with resolution MSC.5(48) adopted on 17 June 1983 subject to amendments by resolution MSC.30(61) adopted on 11 December 1992.

1.1.3 A ship, irrespective of the date of construction, which is converted to a gas carrier on or after 1 July 1998 should be treated as a gas carrier constructed on the date on which such conversion commences.”

Amendments related to filling limits

2 Existing chapter 15 is replaced by the following:

“Chapter 15

Filling limits for cargo tanks

15.1 General

15.1.1 No cargo tanks should have a higher filling limit (*FL*) than 98% at the reference temperature, except as permitted by 15.1.3.

15.1.2 The maximum loading limit (*LL*) to which a cargo tank may be loaded should be determined by the following formula:

$$LL = FL \frac{\rho_R}{\rho_L}$$

where:

LL = loading limit expressed in percent, which means the maximum allowable liquid volume relative to the tank volume to which the tank may be loaded;

FL = filling limit as specified in 15.1.1 or 15.1.3;

ρ_R = relative density of cargo at the reference temperature; and

ρ_L = relative density of cargo at the loading temperature and pressure.

15.1.3 The Administration may allow a higher filling limit (*FL*) than the limit of 98% specified in 15.1.1 at the reference temperature, taking into account the shape of the tank, arrangements of pressure relief valves, accuracy of level and temperature gauging and the difference between the loading temperature and the temperature corresponding to the vapour pressure of the cargo at the set pressure of the pressure relief valves, provided the conditions specified in 8.2.17 are maintained.

15.1.4 For the purposes of this chapter only, *reference temperature* means:

- .1 the temperature corresponding to the vapour pressure of the cargo at the set pressure of the pressure relief valves when no cargo vapour pressure/temperature control as referred to in chapter 7 is provided;
- .2 the temperature of the cargo upon termination of loading, during transport, or at unloading, whichever is the greatest, when a cargo vapour pressure/temperature control as referred to in chapter 7 is provided. If

this reference temperature would result in the cargo tank becoming liquid-full before the cargo reaches a temperature corresponding to the vapour pressure of the cargo at the set pressure of the relief valves required in 8.2, an additional pressure-relieving system complying with 8.3 should be fitted.

15.1.5 The Administration may allow type C tanks to be loaded according to the following formula provided that the tank vent system has been approved in accordance with 8.2.18:

$$LL = FL \frac{\rho_R}{\rho_L}$$

where:

LL = loading limit as specified in 15.1.2;

FL = filling limit as specified in 15.1.1 or 15.1.3;

ρ_R = relative density of cargo at the highest temperature which the cargo may reach upon termination of loading, during transport, or at unloading, under the ambient design temperature conditions described in 7.1.2; and

ρ_L = as specified in 15.1.2.

This paragraph does not apply to products requiring a type 1G ship.

15.2 Information to be provided to the master

The maximum allowable loading limits for each cargo tank should be indicated for each product which may be carried, for each loading temperature which may be applied and for the applicable maximum reference temperature, on a list to be approved by the Administration. Pressures at which the pressure relief valves, including those valves required by 8.3, have been set should also be stated on the list. A copy of the list should be permanently kept on board by the master.

15.3 Chapter 15 applies to all ships regardless of the date of construction.”

- 3 The following words are added at the end of existing paragraph 8.2.17:

“at the maximum allowable filling limit (FL)”.

- 4 The following new paragraph 8.2.18 is added after existing paragraph 8.2.17:

8.2.18 The adequacy of the vent system fitted on tanks loaded in accordance with 15.1.5 is to be demonstrated using the

guidelines developed by the Organization.* A relevant certificate should be permanently kept on board the ship. For the purposes of this paragraph, *vent system* means:

- .1 the tank outlet and the piping to the pressure relief valve;
- .2 the pressure relief valve;
- .3 the piping from the pressure relief valve to the location of discharge to the atmosphere and including any interconnections and piping which joins other tanks.

This paragraph may apply to all ships regardless of the date of construction.”

* Refer to the guidelines to be developed by the Organization.

Amendments related to cargo tank vent systems

- 5 Existing paragraph 8.2.3 is replaced by the following:

“**8.2.3** In general, the setting of the pressure relief valves should not be higher than the vapour pressure which has been used in the design of the tank. However, where two or more pressure relief valves are fitted, valves comprising not more than 50% of the total relieving capacity may be set at a pressure up to 5% above MARVS.”

- 6 The following sentences are added to existing paragraph 8.2.4:

“Valves should be constructed of materials with a melting point above 925°C. Consideration of lower melting point materials for internal parts and seals should be given if their use provides significant improvement to the general operation of the valve.”

- 7 Existing paragraph 8.2.9 is replaced by the following:

“**8.2.9** Each pressure relief valve installed on a cargo tank should be connected to a venting system which should be so constructed that the discharge of gas will be unimpeded and directed vertically upwards at the exit and so arranged as to minimize the possibility of water or snow entering the vent system. The height of vent exits should not be less than $B/3$ or 6 m, whichever is the greater, above the weather deck and 6 m above the working area, the fore-and-aft gangway, deck storage tanks and cargo liquid lines.”

- 8 The following sentences are added to existing paragraph 8.2.16:

“The pressure drop in the vent line from the tank to the pressure relief valve inlet should not exceed 3% of the valve set pressure. For unbalanced pressure relief valves the back pressure in the discharge line should not exceed 10% of the gauge pressure at the relief valve inlet with the vent lines under fire exposure as referred to in 8.5.2.”

The following amendments were adopted by resolution MSC.59(67) on 5 December 1996 and entered into force on 1 July 1998:

Chapter 1 – General

- 1 The following new paragraph 1.3.30.3 is added after existing paragraph 1.3.30.2:

“1.3.30.3 *Recognized standards* are applicable international or national standards acceptable to the Administration or standards laid down and maintained by an organization which complies with the standards adopted by the Organization* and which is recognized by the Administration.”

* Refer to the Minimum Standards for recognized organizations acting on behalf of the Administration, set out in appendix 1 to the Guidelines for the authorization of organizations acting on behalf of the Administration, adopted by the Organization by resolution A.739(18).

Chapter 2 – Ship survival capability and location of cargo tanks

- 2 In paragraph 2.3.3, the words “should be of a type acceptable to the Administration and” are deleted and the words “and should comply with recognized standards” are added at the end of the paragraph.

Chapter 3 – Ship arrangements

- 3 In paragraph 3.8.1, the words “to the approval of the Administration and” are deleted.

Chapter 4 – Cargo containment

- 4 In paragraph 4.2.4.2, in the first sentence, the words “Recognized Standards*” are replaced by the words “recognized standards”.
- 5 In paragraph 4.2.4.3, in the second sentence, the words “(gravity tests)” are replaced by the words “(gravity tanks)”.
- 6 In paragraph 4.2.4.4, the expression “55 N/mm² for ferritic/martensitic steel” is replaced by the expression “55 N/mm² for ferritic-perlitic, martensitic and austenitic steels”.
- 7 In the introductory phrase of paragraph 4.11.2, the words “with the approval of the Administration” are deleted.

Chapter 5 – Process pressure vessels and liquid, vapour and pressure piping systems

- 8 In paragraph 5.2.2.1, in the definition of the efficiency factor e , the existing text of the last sentence is replaced by the following:
“In other cases an efficiency factor of less than 1.0, in accordance with recognized standards, may be required depending on the manufacturing process.”
- 9 In paragraph 5.2.4.4, in the first sentence, the words “be to a standard acceptable to the Administration” are replaced by the words “comply with recognized standards” and at the end of the second sentence, the words “by the Administration” are deleted.
- 10 In paragraph 5.4.1, the existing text of the second sentence is replaced by the following:
“Relaxations from these requirements may be accepted, in accordance with recognized standards, for piping inside cargo tanks and open-ended piping.”
- 11 In paragraph 5.4.2.2, the words “satisfactory to the Administration” are replaced by the words “in accordance with recognized standards”.
- 12 In paragraph 5.4.2.3, the words “acceptable to the Administration” are replaced by the words “complying with recognized standards”.
- 13 In paragraph 5.4.3.2, in the first sentence, the words “standards acceptable to the Administration” are replaced by the words “recognized standards”.
- 14 In paragraph 5.6.4, in the sixth sentence, the words “with 30 s of actuation” are replaced by the words “within 30 s of actuation”.

Chapter 8 – Cargo tank vent systems

- 15 In paragraph 8.2.2, the words “to the satisfaction of the Administration” are replaced by the words “complying with recognized standards”.

Chapter 11 – Fire protection and fire extinction

- 16 In paragraph 11.2.4, in the second sentence, the words “All pipes, valves nozzles” are replaced by the words “All pipes, valves, nozzles”.

Chapter 13 – Instrumentation (gauging, gas detection)

- 17 In paragraph 13.3.1, in the last sentence, the word “Administration” is deleted and the words “port Administration” are replaced by the words “port State authority”.
- 18 In paragraph 13.6.9, the expression “column *h*” is replaced by the expression “column *i*”.

Chapter 14 – Personnel protection

- 19 In paragraph 14.4.1, the expression “column *h*” is replaced by the expression “column *i*”.

Chapter 16 – Use of cargo as fuel

- 20 In paragraph 16.5.6, in the second sentence, the words “and these arrangements should be to the satisfaction of the Administration” are deleted.

Chapter 17 – Special requirements

- 21 In paragraph 17.20.3.1, in the first sentence, the words “or other material acceptable to the Administration” are replaced by the words “in accordance with recognized standards” and the second sentence is deleted.
- 22 In paragraph 17.20.14, in the first sentence, the words “filling limits” are replaced by the words “loading limits”.

Chapter 19 – Summary of minimum requirements

- 23 In column *f* of the table, for the product Butadiene, the entry “F” is replaced by the entry “F + T”.

These amendments, relating to the Harmonized System of Survey and Certification, were adopted by the Maritime Safety Committee on 24 May 1990 by resolution MSC.17(58) and entered into force on 3 February 2000.

1.3 Definitions

A new definition should be added as follows:

“1.3.3.3 Anniversary date means the day and the month of each year which will correspond to the date of expiry of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk.”

1.5 Surveys and certification

The existing text of section 1.5 should be replaced by the following:

“1.5.1 Survey procedure

1.5.1.1 The survey of ships, so far as regards the enforcement of the provisions of the regulations and granting of exemptions therefrom, should be carried out by officers of the Administration. The Administration may, however, entrust the surveys either to surveyors nominated for the purpose or to organizations recognized by it.

1.5.1.2 The Administration nominating surveyors or recognizing organizations to conduct surveys should, as a minimum, empower any nominated surveyor or recognized organization to:

- .1** require repairs to a ship; and
- .2** carry out surveys if requested by the appropriate authorities of a port State.

The Administration should notify the Organization of the specific responsibilities of the nominated surveyors or recognized organizations and of the conditions of the authority delegated to them for circulation to the Contracting Governments.

1.5.1.3 When a nominated surveyor or recognized organization determines that the condition of the ship or its equipment does not correspond substantially with the particulars of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, or is such that the ship is not fit to proceed to sea without danger to the ship or persons on board, or without presenting unreasonable threat of harm to the marine environment, such surveyor or organization should immediately ensure that corrective action is taken and should, in due course, notify the Administration. If such corrective action is not taken, the Certificate should be withdrawn and the Administration should

be notified immediately; and, if the ship is in a port of another Contracting Government, the appropriate authorities of the port State should also be notified immediately. When an officer of the Administration, a nominated surveyor or a recognized organization has notified the appropriate authorities of the port State, the Government of the port State concerned should give such officer, surveyor or organization any necessary assistance to carry out their obligations under this paragraph. When applicable, the Government of the port State concerned should take such steps as will ensure that the ship does not sail until it can proceed to sea or leave the port for the purpose of proceeding to the nearest appropriate repair yard available without danger to the ship or persons on board or without presenting an unreasonable threat of harm to the marine environment.

1.5.1.4 In every case, the Administration should guarantee the completeness and efficiency of the survey, and should undertake to ensure the necessary arrangements to satisfy this obligation.

1.5.2 Survey requirements

1.5.2.1 The structure, equipment, fittings, arrangements and material (other than items in respect of which a Cargo Ship Safety Construction Certificate, Cargo Ship Safety Equipment Certificate and Cargo Ship Safety Radio Certificate or Cargo Ship Safety Certificate are issued) of a gas carrier should be subjected to the following surveys:

- .1** an initial survey before the ship is put in service or before the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk is issued for the first time, which should include a complete examination of its structure, equipment, fittings, arrangements and material in so far as the ship is covered by the Code. This survey should be such as to ensure that the structure, equipment, fittings, arrangements and material fully comply with the applicable provisions of the Code;
- .2** a renewal survey at intervals specified by the Administration, but not exceeding 5 years, except where regulation 1.5.6.2.2, 1.5.6.5, 1.5.6.6 or 1.5.6.7 is applicable. The renewal survey should be such as to ensure that the structure, equipment, fittings, arrangements and material fully comply with the applicable provisions of the Code;
- .3** 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 Certificate

which should take the place of one of the annual surveys specified in 1.5.2.1.4. The intermediate survey should be such as to ensure that the safety equipment, and other equipment, and associated pump and piping systems fully comply with the applicable provisions of the Code and are in good working order. Such intermediate surveys should be endorsed on the Certificate issued under 1.5.4 or 1.5.5;

- .4** an annual survey within 3 months before or after each anniversary date of the Certificate, including a general inspection of the structure, equipment, fittings, arrangements and material referred to in 1.5.2.1.1 to ensure that they have been maintained in accordance with 1.5.3 and that they remain satisfactory for the service for which the ship is intended. Such annual surveys should be endorsed on the Certificate issued under 1.5.4 or 1.5.5;
- .5** an additional survey, either general or partial according to the circumstances, should be made when required after an investigation prescribed in 1.5.3.3, or whenever any important repairs or renewals are made. Such a survey should ensure that the necessary repairs or renewals have been effectively made, that the material and workmanship of such repairs or renewals are satisfactory, and that the ship is fit to proceed to sea without danger to the ship or persons on board or without presenting unreasonable threat of harm to the marine environment.

1.5.3 Maintenance of conditions after survey

1.5.3.1 The condition of the ship and its equipment should be maintained to conform with the provisions of the Code to ensure that the ship will remain fit to proceed to sea without danger to the ship or persons on board or without presenting unreasonable threat of harm to the marine environment.

1.5.3.2 After any survey of the ship under 1.5.2 has been completed, no change should be made in the structure, equipment, fittings, arrangements and material covered by the survey, without the sanction of the Administration, except by direct replacement.

1.5.3.3 Whenever an accident occurs to a ship or a defect is discovered, either of which affects the safety of the ship or the efficiency or completeness of its life-saving appliances or other

equipment covered by the Code, the master or owner of the ship should report at the earliest opportunity to the Administration, the nominated surveyor or recognized organization responsible for issuing the Certificate, who should cause investigations to be initiated to determine whether a survey, as required by 1.5.2.1.5, is necessary. If the ship is in a port of another Contracting Government, the master or owner should also report immediately to the appropriate authorities of the port State and the nominated surveyor or recognized organization should ascertain that such a report has been made.

1.5.4 Issue and endorsement of International Certificate of Fitness

1.5.4.1 A Certificate, called an International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, should be issued after an initial or renewal survey to a gas carrier engaged in international voyages which complies with the relevant provisions of the Code.

1.5.4.2 An International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk should be drawn up in the form corresponding to the model given in the appendix. If the language used is neither English nor French, the text should include the translation into one of these languages.

1.5.4.3 The Certificate issued under provisions of this section should be available on board for examination at all times.

1.5.4.4 Notwithstanding any other provisions of the amendments to this Code, adopted by the Maritime Safety Committee (MSC) by resolution MSC.17(58), any International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk, which is current when these amendments enter into force, should remain valid until it expires under the terms of this Code prior to the amendments entering into force.

1.5.5 Issue or endorsement of International Certificate of Fitness by another Government

1.5.5.1 A Contracting Government to the 1974 SOLAS Convention may, at the request of another Contracting Government, cause a ship entitled to fly the flag of the other State to be surveyed and, if satisfied that the requirements of the Code are complied with, issue or authorize the issue of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk to the ship, and, where appropriate, endorse or authorize the endorsement of the Certificate on board the ship in accordance with the Code. Any Certificate so issued should contain a statement to the effect that it has been issued at the

request of the Government of the State whose flag the ship is entitled to fly.

1.5.6 Duration and validity of International Certificate of Fitness

1.5.6.1 An International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk should be issued for a period specified by the Administration which should not exceed 5 years.

1.5.6.2.1 Notwithstanding the provisions of 1.5.6.1, when the renewal survey is completed within 3 months before the expiry date of the existing Certificate, the new Certificate should 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,

1.5.6.2.2 When the renewal survey is completed after the expiry date of the existing Certificate, the new Certificate should 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.

1.5.6.2.3 When the renewal survey is completed more than 3 months before the expiry date of the existing Certificate, the new Certificate should 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.

1.5.6.3 If a Certificate is issued for a period of less than 5 years, the Administration may extend the validity of the Certificate beyond the expiry date to the maximum period specified in 1.5.6.1, provided that the surveys referred to in regulation 1.5.2.1.3 and 1.5.2.1.4, applicable when a Certificate is issued for a period of 5 years, are carried out as appropriate.

1.5.6.4 If a renewal survey has been completed and a new Certificate cannot be issued or placed on board the ship before the expiry date of the existing Certificate, the person or organization authorized by the Administration may endorse the existing Certificate and such a Certificate should be accepted as valid for a further period which should not exceed 5 months from the expiry date.

1.5.6.5 If a ship, at the time when a Certificate expires, is not in a port in which it is to be surveyed, the Administration may extend the period of validity of the Certificate but this extension should 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. No Certificate should be extended for a period longer than 3

months, and a ship to which an extension is granted should 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 Certificate. When the renewal survey is completed, the new Certificate should be valid to a date not exceeding 5 years from the date of expiry of the existing Certificate before the extension was granted.

1.5.6.6 A Certificate issued to a ship engaged on short voyages, which has not been extended under the foregoing provisions of this section, may be extended by the Administration 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 Certificate should be valid to a date not exceeding 5 years from the date of expiry of the existing Certificate before the extension was granted.

1.5.6.7 In special circumstances, as determined by the Administration, a new Certificate need not be dated from the date of expiry of the existing Certificate as required by 1.5.6.2.2, 1.5.6.5 or 1.5.6.6. In these special circumstances, the new Certificate should be valid to a date not exceeding 5 years from the date of completion of the renewal survey.

1.5.6.8 If an annual or intermediate survey is completed before the period specified in 1.5.2, then:

- .1** the anniversary date shown on the Certificate should be amended by endorsement to a date which should not be more than 3 months later than the date on which the survey was completed;
- .2** the subsequent annual or intermediate survey required by 1.5.2 should be completed at the intervals prescribed by that section using the new anniversary date;
- .3** the expiry date may remain unchanged provided one or more annual or intermediate surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by 1.5.2 are not exceeded.

1.5.6.9 A Certificate issued under 1.5.4 or 1.5.5 should cease to be valid in any of the following cases:

- .1** if the relevant surveys are not completed within the periods specified under 1.5.2;
- .2** if the Certificate is not endorsed in accordance with 1.5.2.1.3 or 1.5.2.1.4;

- .3** upon transfer of the ship to the flag of another State. A new Certificate should only be issued when the Government issuing the new Certificate is fully satisfied that the ship is in compliance with the provisions of 1.5.3.1 and 1.5.3.2. In the case of a transfer between Contracting Governments, if requested within 3 months after the transfer has taken place, the Government of the State whose flag the ship was formerly entitled to fly should, as soon as possible, transmit to the Administration copies of the Certificate carried by the ship before the transfer and, if available, copies of the relevant survey reports.”

Appendix

**Model form of International Certificate of Fitness for the
Carriage of Liquefied Gases in Bulk**

The existing Model Form of Certificate should be replaced by the following:

**“INTERNATIONAL CERTIFICATE OF FITNESS FOR THE CARRIAGE
OF LIQUEFIED GASES IN BULK**

(Official seal)

Issued under the provisions of the
INTERNATIONAL CODE FOR THE
CONSTRUCTION AND EQUIPMENT OF SHIPS
CARRYING LIQUEFIED GASES IN BULK
(resolution MSC.5(48) as amended by resolution MSC.17(58))

under the authority of the Government of

.....
(full designation of country)

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

Particulars of ship¹

Name of ship

Distinctive number or letters

Port of registry

Cargo capacity (m³)

Ship type (Code paragraph 2.1.2)

IMO Number²

¹ Alternatively, the particulars of the ship may be placed horizontally in boxes.
² In accordance with resolution A.600(15) – IMO Ship Identification Number Scheme, this information may be included voluntarily.

Date on which keel was laid or ship was at a similar stage of construction or, (in the case of a converted ship) date on which conversion to a gas carrier was commenced

The ship also complies fully with the following amendments to the Code:

.

This ship is exempted from compliance with the following provisions of the Code:

.

THIS IS TO CERTIFY:

- 1 .1 That the ship has been surveyed in accordance with the provisions of 1.5 of the Code;
- .2 that the survey showed that the structure, equipment, fittings, arrangements and materials of the ship and the conditions thereof are in all respects satisfactory and that the ship complies with the relevant provisions of the Code.
- 2 That the following design criteria have been used:
 - .1 ambient air temperature °C
 - .2 ambient water temperature °C

.3

Tank type and number	Stress factors				Materials	MARVS
	A	B	C	D		
Cargo piping						

NB: Tank numbers referred to in this list are identified on attachment 2, signed and dated tank plan.

- .4 Mechanical properties of the cargo tank material were determined at °C

3 That the ship is suitable for the carriage in bulk of the following products, provided that all relevant operational provisions of the Code are observed.

Products	Conditions of carriage (tank numbers, etc.)
Continued on attachment 1. ³ Tank numbers referred to in this list are identified on attachment 2.	

4 That in accordance with 1.4/2.8.2³, the provisions of the Code are modified in respect of the ship in the following manner:

5 That the ship must be loaded:

- .1 in accordance with the loading conditions provided in the approved loading manual, stamped and dated and signed by a responsible officer of the Administration, or of an organization recognized by the Administration;³
- .2 in accordance with the loading limitations appended to this Certificate.³

Where it is required to load the ship other than in accordance with the above instruction, then the necessary calculations to justify the proposed loading conditions should be communicated to the certifying Administration which may authorize in writing the adoption of the proposed loading condition.⁴

³ Delete as appropriate.

⁴ Instead of being incorporated in the Certificate, this text may be appended to the Certificate if duly signed and stamped.

This Certificate is valid until⁵
subject to surveys in accordance with 1.5 of the Code.

Issued at
(Place of issue of Certificate)

.....
(Date of issue) *(Signature of duly authorized official
issuing the Certificate)*

(Seal or stamp of the authority, as appropriate)

Notes on completion of Certificate:

- 1 "Ship type": any entry under this line must be related to all relevant recommendations, e.g. an entry "Type 2G" should mean type 2G in all respects prescribed by the Code.
- 2 Paragraphs 2.1 and 2.2: the ambient temperatures accepted or required by the Administration for the purposes of 4.8.1 of the Code to be inserted.
- 3 Paragraph 2.3: stress factors and materials as accepted or required by the Administration for the purposes of 4.5.1.4 and 4.5.1.6 of the Code to be inserted.
- 4 Paragraph 2.4: temperature accepted by the Administration for the purposes of 4.5.1.7 to be inserted.
- 5 Paragraph 3: only products listed in chapter 19 of the Code or which have been evaluated by the Administration in accordance with paragraph 1.1.6 of the Code or their compatible mixtures having physical properties within the limitations of tank design should be listed. In respect of the latter "new" products, any special requirements provisionally prescribed should be noted.

⁵ Insert the date of expiry as specified by the Administration in accordance with 1.5.6.1 of the Code. The day and the month of this date correspond to the anniversary date as defined in 1.3.3.3 of the Code, unless amended in accordance with 1.5.6.8 of the Code.

**ENDORSEMENT FOR ANNUAL
AND INTERMEDIATE SURVEYS**

THIS IS TO CERTIFY that, at a survey required by 1.5.2 of the Code, the ship was found to comply with the relevant provisions of the Code:

Annual survey: Signed
(Signature of authorized official)
Place
Date
(Seal or stamp of the authority, as appropriate)

Annual/Intermediate³ survey: Signed
(Signature of authorized official)
Place
Date
(Seal or stamp of the authority, as appropriate)

Annual/Intermediate³ survey: Signed
(Signature of authorized official)
Place
Date
(Seal or stamp of the authority, as appropriate)

Annual survey: Signed
(Signature of authorized official)
Place
Date
(Seal or stamp of the authority, as appropriate)

³ Delete as appropriate.

Annual/intermediate survey in accordance with 1.5.6.8.3

THIS IS TO CERTIFY that, at an annual/intermediate³ survey in accordance with 1.5.6.8.3 of the Code, the ship was found to comply with the relevant provisions of the Code.

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

Endorsement to extend the Certificate if valid for less than 5 years where 1.5.6.3 applies

The ship complies with the relevant provisions of the Code, and this Certificate should, in accordance with 1.5.6.3 of the Code, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

Endorsement where the renewal survey has been completed and 1.5.6.4 applies

The ship complies with the relevant provisions of the Code, and this Certificate should, in accordance with 1.5.6.4 of the Code, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

Endorsement to extend the validity of the Certificate until reaching the port of survey or for a period of grace where 1.5.6.5/1.5.6.6 applies

This Certificate should, in accordance with 1.5.6.5/1.5.6.6³ of the Code, be accepted as valid until

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

Endorsement for advancement of anniversary date where 1.5.6.8 applies

In accordance with 1.5.6.8 of the Code, the new anniversary date is

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

In accordance with 1.5.6.8 of the Code, the new anniversary date is

Signed
(Signature of authorized official)

Place

Date

(Seal or stamp of the authority, as appropriate)

³ Delete as appropriate.

**ATTACHMENT 1 TO THE INTERNATIONAL
CERTIFICATE OF FITNESS FOR THE CARRIAGE OF
DANGEROUS CHEMICALS IN BULK**

Continuation of the list of products specified in section 3,
and the conditions of their carriage

Products	Conditions of carriage (tank numbers, etc.)

Date
(as for Certificate)

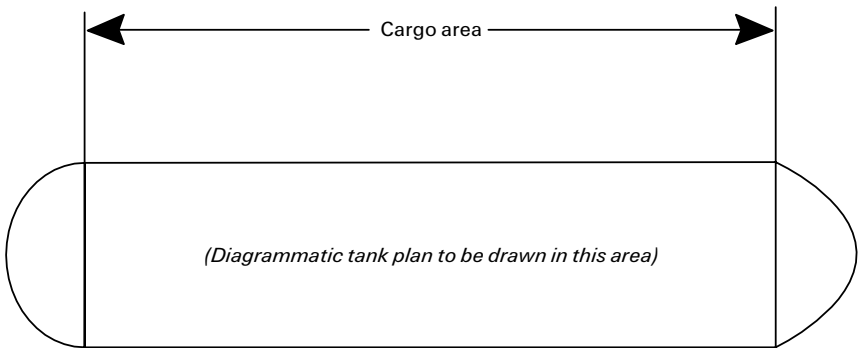
.....
*(Signature of official issuing
the Certificate and/or seal or stamp
of issuing authority)*

**ATTACHMENT 2 TO THE INTERNATIONAL
CERTIFICATE OF FITNESS FOR THE CARRIAGE OF
DANGEROUS CHEMICALS IN BULK**

TANK PLAN (specimen)

Name of ship:

Distinctive number or letters:



Date
(as for Certificate)

.....
*(Signature of official issuing
the Certificate and/or seal or stamp
of issuing authority)"*

The following amendments were adopted by resolution MSC.103(73) on 5 December 2000 and entered into force on 1 July 2002:

Chapter 3 – Ship arrangements

- 1 The following text is inserted after the title of paragraph 3.7:
“(Paragraph 3.7.2.2 applies to ships constructed on or after 1 July 2002)”.
- 2 The existing text of paragraph 3.7.2 is replaced by the following:
“**3.7.2.1** The hold or interbarrier spaces of Type A independent tank ships should be provided with a drainage system suitable for handling liquid cargo in the event of cargo tank leakage or rupture. Such arrangements should provide for the return of any cargo leakage to the liquid cargo piping.
3.7.2.2 Arrangements referred to in 3.7.2.1 should be provided with a removable spool piece.”
- 3 The existing text of paragraph 3.7.4 is replaced by the following:
“**3.7.4** Ballast spaces, including wet duct keels used as ballast piping, fuel-oil tanks and gas-safe spaces may be connected to pumps in the machinery spaces. Dry duct keels with ballast piping passing through may be connected to pumps in the machinery spaces, provided the connections are led directly to the pumps and the discharge from the pumps is led directly overboard with no valves or manifolds in either line which could connect the line from the duct keel to lines serving gas-safe spaces. Pump vents should not be open to machinery spaces.”

Chapter 4 – Cargo containment

- 4 The third sentence of paragraph 4.8.3 is replaced by the following:
“For structural members connecting inner and outer hulls, the mean temperature may be taken for determining the steel grade.”
- 5 The first sentence of paragraph 4.10.10.3.7 is replaced by the following:
“Pneumatic testing of pressure vessels other than cargo tanks should only be considered on an individual case basis by the Administration.”

Chapter 5 – Process pressure vessels and liquid, vapour, and pressure piping systems

- 6 The following text is inserted after the title of paragraph 5.6:
“(Paragraph 5.6.5 applies to ships constructed on or after 1 July 2002)”.
- 7 A new paragraph 5.6.5 is inserted after existing paragraph 5.6.4:
“**5.6.5** The closure time of 30 s for the emergency shutdown valve referred to in 5.6.4 should be measured from the time of manual or automatic initiation to final closure. This is called the total shutdown time and is made up of a signal response time and a valve closure time. The valve closure time should be such as to avoid surge pressure in pipelines. Such valves should close in such a manner as to cut off the flows smoothly.”
- 8 Existing paragraph 5.6.5 is renumbered as paragraph 5.6.6.
- 9 Existing paragraph 5.7.3 is replaced by the following:
“**5.7.3** For cargo hoses installed on board ships on or after 1 July 2002, each new type of cargo hose, complete with end-fittings, should be prototype-tested at a normal ambient temperature with 200 pressure cycles from zero to at least twice the specified maximum working pressure. After this cycle pressure test has been carried out, the prototype test should demonstrate a bursting pressure of at least 5 times its specified maximum working pressure at the extreme service temperature. Hoses used for prototype testing should not be used for cargo service. Thereafter, before being placed in service, each new length of cargo hose produced should be hydrostatically tested at ambient temperature to a pressure not less than 1.5 times its specified maximum working pressure, but not more than two-fifths of its bursting pressure. The hose should be stencilled or otherwise marked with the date of testing, its specified maximum working pressure and, if used in services other than the ambient temperature services, its maximum and minimum service temperature, as applicable. The specified maximum working pressure should not be less than 10 bar gauge.”

Chapter 8 – Cargo tank vent systems

- 10 The existing text of the first sentence of paragraph 8.2.7 is replaced by the following:
“The changing of the set pressure under the provisions of 8.2.6, and the corresponding resetting of the alarms referred to in 13.4.1, should be carried out under the supervision of the master in accordance with procedures approved by the Administration and specified in the ship’s operating manual.”

Chapter 9 – Environmental control

- 11 The following sentence is added at the end of paragraph 9.5.3:
“When not in use, the inert gas system should be made separate from the cargo system in the cargo area except for connections to the hold spaces or interbarrier spaces.”

Chapter 11 – Fire protection and fire extinction

- 12 The second sentence of paragraph 11.2.4 is replaced by the following:
“All pipes, valves, nozzles and other fittings in the fire-fighting systems should be resistant to the effects of fire and to corrosion by water.”

Chapter 13 – Instrumentation (gauging, gas detection)

- 13 The last three sentences of paragraph 13.3.1 are replaced by the following:
“The emergency shutdown valve referred to in 5.6.1 and 5.6.3 may be used for this purpose. If another valve is used for this purpose, the same information as referred to in 5.6.4 should be available on board. During loading, whenever the use of these valves may possibly create a potential excess pressure surge in the loading system, the port State authority may agree to alternative arrangements such as limiting the loading rate, etc.”

Chapter 14 – Personnel protection

- 14 Existing paragraph 14.3.2 is replaced by the following:
“**14.3.2** The ship should have on board medical first-aid equipment, including oxygen resuscitation equipment and antidotes for cargoes to be carried, based on the guidelines developed by the Organization.”

Chapter 18 – Operating requirements

- 15 Existing paragraph 18.3.3 is replaced by the following:
“**18.3.3** Officers should be trained in emergency procedures to deal with conditions of leakage, spillage or fire involving the cargo, based on the guidelines developed by the Organization, and a sufficient number of them should be instructed and trained in essential first aid for cargoes carried.”
- 16 In paragraph 18.9, the reference to paragraph 17.4.3 is added to the list of references.

