



TECHNICAL CIRCULAR No. 070 of 29th July 2012

To:	All Surveyors/Auditor
Applicable to flag:	All Flags
Subject:	Carriage of Dangerous Goods
Reference:	SAFETY – DANGEROUS GOODS

Carriage of Dangerous Goods SOLAS Reg. II-2/19

This circular documents the CONARINA process for carrying out a survey for a vessel's compliance with Regulation 19, Chapter II-2 of the International Convention for the Safety of Life at Sea 1974, as amended, and issuance of a Document of Compliance for the Carriage of Dangerous Goods.

This circular applies to CONARINA vessels whose cargo spaces are in accordance with Regulation II-2/19.2.2 of the International Convention for SOLAS 1974, as amended, when requested by the Owners, or their representatives to issue a Document of Compliance in accordance with Regulation II-2/19.4.

This circular applies to Flag Administrations that are signatory or non-signatory to SOLAS 1974, as amended, and that have authorized CONARINA to issue statutory SOLAS Certificates on their behalf.

The following ships, with cargo spaces intended for the carriage of packaged dangerous goods, shall comply with the applicable requirements of table 19.3 as amended not later than the date of the first renewal survey on or after the 1 January 2011:

- .1 cargo ships of 500 gross tonnage and upwards and passenger ships constructed on or after 1 September 1984 but before 1 January 2011; and
- .2 cargo ships of less than 500 gross tonnage constructed on or after 1 February 1992 but before 1 January 2011.

The extent of compliance of each applicable requirement depends on the construction date of the ship. Refer to *Attachment C* for exceptions applicable to existing ships.

- a) Regulation II-2/19 (formerly II-2/54) was included in the 2000 Amendments to SOLAS and applies to passenger ships and cargo ships, constructed on or after 1 July 2002, which are carrying dangerous goods as defined in SOLAS VII/1 (except class 6.2 and class 7).

Regulation II-2/54, as amended, is applicable to:

1. Passenger ships, constructed on or after 1 September 1984, but before 1 July 2002; or
2. Cargo ships of 500 gross tons or over, constructed on or after 1 September 1984, but before 1 July 2002; or
3. Cargo ships of less than 500 gross tons, constructed on or after 1 February 1992, but before 1

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July 2002.

However, there have been cases where owners have requested issuance of a document of compliance to vessels subject to SOLAS constructed before 1 September 1984 or to vessels of less than 500 gross tons constructed before 1 February 1992. In such cases, verification of compliance with regulation II-2/54, as amended, must be completed in accordance with this circular prior to issuance of any document of compliance.

When a request is received by the Owner for initial issuance of a document of compliance, the CONARINA technical office shall be contacted and requested to review ship's drawings for compliance with regulation II-2/19 or II-2/54, as amended, for the classes of dangerous goods to be carried. Refer to *Attachment B*, which is a sample of a review letter that was written by one of the technical offices.

The Attending Surveyor shall become familiar with the vessel's type and cargo space arrangements, either by reviewing the Builder's specification.

The Surveyor shall check for and note the status of classification and statutory surveys, outstanding recommendations, deficiencies of equipment, and any other additional information that may be applicable at the time of requested attendance

- b. This process shall not be initiated if, at the time of survey:

there are one or more outstanding class recommendations that may obstruct the completeness of the process;

there are one or more outstanding class recommendations that are interfering with the normal operation of the vessel; or

the vessel has been issued Conditional Safety Construction, Safety Equipment, or Passenger Ship Safety Certificates.

- c. Items of survey to be specifically checked and reported upon are included in the International Convention for the Safety of Life at Sea, 1974, as amended.

- d. For vessels on which owners are requesting issuance of a Document of Compliance, it is the Owners responsibility to supply the necessary plans and specification.

- e. The survey shall ensure compliance with the applicable requirements of Regulation II-2/19 (II-2/54, as amended) of the International Convention for the Safety of Life at Sea, 1974, as amended.

- f. Items of non-conformance or unsatisfactory condition noted during the survey shall brought to the attention of the Owner, their representatives, or other appropriate party for remedial action.

- g. Upon satisfactory completion of the survey the following shall be issued:

1. Report - CARRIAGE OF DANGEROUS GOODS (CODG Check Sheet)
2. Document of Compliance for the Carriage of Dangerous Goods, (Existing certificates are valid until their expiration date, i.e., they are to be re-issued after completion of the first renewal survey on or after 1 January 2011).

When form DOC is used for an existing ship (ships built before 1 January 2011):

- (i) Solid Dangerous Goods in Bulk
 - (a) the option "19.4" should be selected

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- (ii) Dangerous Goods in Packaged Form
 (a) the option "II-2/19.3 as applicable the drop-down menu in the title area;
 (b) new and revised dangerous goods classes are to be completed "N/A" unless the applicable requirements specified in SOLAS II-2/19 Table 19.3 as amended by MSC.269(85) are met.
- Two new: 2.3 flammable, 4.3 liquids
 - Four revised: 5.2, 8 Liquids, 8 Liquids FP >23 degC to < 60 degC, 9

New applicable requirements may be verified based on the DG carried under the current DOC.

Dangerous Good:	If the current DOC allows the following class(es) to be carried:	Then, the following classes can be carried:
Non-solid Bulk	2.1	2.3 Flammable (new DG class), 5.2 (revised), 9 (revised)
	3 FP < 23 degC, 6.1 liquids FP < 23 degC, 8 liquids FP < 23 degC	2.3 Flammable (new DG class), 4.3 Liquids (new DG class), 5.2 (revised), 8 Liquids (revised), 8 Liquids FP >23 degC to < 60 degC (revised), 9 (revised)
	2.2, 2.3 non-flammable, 3 FP > 23 degC and < 60 degC, 4.1,4.2, 4.3 solids, 5.1, 6.1 liquids, 6.1 liquids FP > 23degC and < 60 degC, 6.1 solids, 8 solids	5.2 (revised)* * Stowage of this class of goods under deck or in enclosed ro-ro spaces is prohibited
	3 FP < 23 degC, 6.1 liquids, 6.1 liquids FP < 23 degC, 6.1 liquids, 8 liquids FP < 23 degC	8 liquids (revised)
	3 FP < 23 degC, 6.1 liquids FP < 23 degC, 6.1 liquids FP > 23degC to < 60 degC, 8 liquids FP < 23 degC	8 liquids FP > 23degC to < 60 degC (revised)

- h. Subsequent to issuance of a Document of Compliance, the Surveyor shall complete the Check Sheet.

In accordance with MSC/Circulars 1027 and 1266, the Document of Compliance shall be valid for five years and shall not be extended beyond the expiration date of the Safety Construction Certificate. Consequently, the expiration date of the Document of Compliance shall coincide with the due dates of the Special Surveys Hull and Machinery. The Document of Compliance should be endorsed for Annual and Intermediate Surveys upon satisfactory completion of the survey.

- i. Should Owners request additional dangerous goods classes to be listed on the Document of

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Compliance, the document may be reissued upon CONARINA technical office's and surveyor's verification that the vessel meets the requirements of Regulation II-2/19 for the class of goods to be carried.

For the addition of certain classes of dangerous goods to an existing, CONARIA- issued DOC, CONARINA technical office's review may not be necessary. In this regard, the following table may be used to add class(es) of dangerous goods, without CONARINA technical office's review. In some cases, verification of additional equipment may be necessary, as noted in the table below:

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Dangerous Good:	If the DOC allows the following class(es) to be carried:	Then, the following classes can be added:
Solid Bulk	4.1	4.2 (except Seed Cake (solvent-extracted)), 5.1, 6.1, 8 and 9
	4.2 (except Seed Cake (solvent-extracted))	5.1 (except ammonium nitrate and ammonium nitrate fertilizer), 6.1, 8 and 9 (same exception as 5.1)
	Seed Cake (solvent-extracted - 4.2)	Any class
	4.3	Any class For classes 4.1, 4.2, 5.1 and 9, it is to be verified by the attending Surveyor that an immediately available water supply from the fire main, for 4 nozzles, capable of being trained on any part of the empty cargo hold is provided.
	5.1 (except ammonium nitrate and ammonium nitrate fertilizer)	6.1 and 8
	Ammonium nitrate and/or ammonium nitrate fertilizer	Any class, except Seed Cake (solvent-extracted)
Non-solid Bulk	Applicable before 1 January 2011 2.1 or 2.3	1.4S, 2.2, 3 (23<degC<61)*, 4.1*, 4.2*, 4.3*, 5.1*, 5.2**, 6.1 solids, 8 solids, or 9 (* The attending Surveyor is to verify that additional portable fire extinguishers with a total capacity of at least 12kg of dry powder or equivalent are provided for cargo spaces carrying these dangerous goods.) (** Stowage of this class of goods under deck or in enclosed ro-ro spaces is prohibited)
	Applicable on or after 1 January 2011 2.1 or 2.3 non-flammable	1.4S, 2.2, 3 (23<degC<60)*, 4.1*, 4.2*, 4.3 solids, 5.1*, 5.2**, 6.1 solids or 8 solids (* The attending Surveyor is to verify that additional portable fire extinguishers with a total capacity of at least 12kg of dry powder or equivalent are provided for cargo spaces carrying these dangerous goods.) (** Stowage of this class of goods under deck or in enclosed Ro-Ro spaces is prohibited)
	Applicable before 1 January 2011 4.3	2.2, 2.3, 3 (23<degC<61), 4.1, 4.2, 5.1, 6.1 solids, 8 solids, or 9

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	Applicable on or after 1 January 2011 4.3 Solids	2.2, 2.3 non-flammable, 3 (23≤degC≤60), 4.1, 4.2, 5.1, 6.1 solids, 8 solids,
	3, 6.1 liquids or 8 liquids with a flash point < 23 degC	Any class except "1.1 to 1.6 Explosives"

Israeli Ports

Please be advised that Israel requires vessels loading or discharging dangerous goods in their ports to have documents of compliance issued in accordance with the requirements of SOLAS II-2/19 regardless of the year of construction.

Italian Ports

Please be advised that Italy requires vessels loading or discharging dangerous goods in their ports to have documents of compliance issued in accordance with the requirements of SOLAS II-2/19. Additionally, the Italian Ministry of Transportation and Navigation requires that the following note be included on all DOC issued to vessels subject to SOLAS built before 1 September 1984, and vessels less than 500 gross tons built before 1 February 1992:

"Cargo Spaces are constructed and equipped in accordance with the special requirements contained in SOLAS II-2/19.3 as described in the 2000 amendments."

As an alternative, this statement required by the Italian Coast Guard can be included in the Safety Construction certificate, as applicable.

Attachment B : Sample Review Letter

SUBJECT: "CARIBBEAN DREAM" Carriage of Dangerous Goods

We have checked drawings of the subject vessel for compliance with Regulation 19 of SOLAS 1974, as amended. As far as could be seen from these drawings, it appears that the following classes of dangerous goods as defined in regulations VII/1 and VII/7 of SOLAS 1974, as amended, and the IMDG Code, as amended, may be carried on board the subject vessel in packaged form or in bulk provided the notes 1 through 7 are confirmed by the Surveyor.

Packaged form:

- Class 2 (See Note- 2 below)
- Class 3 (See Note- 1 and 2 below)
- Class 4
- Class 5.1
- Class 5.2
- Class 6.1 (See Note- 1 and 2 below)
- Class 8 (See Note- 1 and 2 below)

Bulk form:

- Class 4.1 (See Note- 2 and 5 below)
- Class 4.2 (See Note- 2 and 5 below)
- Class 4.3 (See Note- 2 and 5 below)
- Class 5.1 (See Note- 2 and 5 below)

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- Class 6.1
- Class 8
- Class 9 (See Note- 2 and 5 below)

Notes:

1. All liquid of Class 3 and 8 having a flash point below 23°C and any liquid of class 6.1 may not be carried unless a special bilge pumping arrangement is provided per Regulation II-2/19.3.5 of SOLAS 1974, as amended.
2. All flammable gasses of class- 2 and all liquids of class 3, 6.1, and 8 having a flash point below 23°C in packaged form and class- 4.1, 4.2, 4.3, 5.1, and 9 in bulk form may not be carried unless all electrical equipment installed in the cargo holds in which the subject dangerous goods are stored are of certified safe type (intrinsically safe type or explosion proof type). Also, the cargo hold ventilation fans are to be provided with suitable wire mesh guards fitted over inlets and outlets of the fans and ventilation openings. This needs to be confirmed by the Surveyor.
3. It is assumed that personal protection and portable fire extinguishers are provided per Regulations II-2/19.3.6 and II-2/19.3.7, respectively. This needs to be confirmed by the Surveyor.
4. Dangerous goods of class 2, 3, 4, 5.1, 6.1, and 8 in packaged form may not be carried in the cargo hold No. [4] since the requirement of minimum rate of air changes per Regulation II-2/19.3.4.1 are not met.
5. Dangerous goods of class 4.1, 4.2, 4.3, 5.1, and 9 may not be carried in bulk in the cargo hold No. [4] since the requirement of minimum rate of air changes per Regulation II-2/19.3.4.1 are not met.
6. No dangerous goods are to be carried in the cargo hold No. [4] unless the boundary bulkhead between No. [4] cargo hold and the engine room is insulated to A-60 as per Regulation II-2/19.3.8. This needs to be confirmed by the Surveyor.
7. It is noted that outlets of fire main are provided on deck in the cargo hold area. This will satisfy the water supply requirements per Regulation II-2/19.3.1, provided that the following requirements per Regulation II-2/19.3.1.2 are complied with (This needs to be confirmed by the Surveyor):
The quantity of water delivered is capable of supplying four nozzles at a pressure of at least 2.65 kg/cm², capable of being trained on any part of the cargo space when empty.

Finally, we understand that the "Document of Compliance to be issued by the Surveyor is to indicate the following wording:

Carriage of dangerous goods as defined in Regulations VII/1 and VII/7 of SOLAS 1974, as amended, shall be in accordance with the IMDG Code, BC Code, and supplemental requirements that may be imposed by the Administration. There are no special requirements in the above mentioned regulation II-2/19 for the carriage of dangerous goods of classes 6.2 and 7, and for the carriage of dangerous goods in limited quantities, as required in chapter 3.4 of the IMDG Code.

Attachment C : Exceptions to demonstrate compliance with SOLAS II-2/19.3

The following exceptions are to be applied to existing ships (ships built before 1 January 2011) to demonstrate compliance with SOLAS II-2/19 Table 19.3 as amended.

- (1) Cargo ships of 500 gross tonnage and upwards and passenger ships constructed on or after 1 September 1984 but before 1 July 1986 need not comply with regulation 19.3.3 provided that they comply with regulation 54.2.3 as adopted by resolution MSC.1(XLV)

Detection system

An approved fire detection and fire alarm system shall be fitted to all enclosed cargo spaces including closed vehicle deck spaces. Where the detection system utilizes samples of atmosphere drawn from such cargo spaces provision shall be made to prevent, in the event of cargo leakage, the discharge of contaminated atmosphere through the sampling system into the space in which the detection apparatus is situated. A notice stating that the samples shall be discharged to the open air when cargoes giving off toxic fumes are being carried shall be permanently exhibited at the equipment.

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(2) Cargo ships of 500 gross tonnage and upwards and passenger ships constructed on or after 1 July 1986 but before 1 February 1992 need not comply with regulation 19.3.3 provided that they comply with regulation 54.2.3 as adopted by resolution MSC.6(48).

Detection system

A fixed fire detection and fire alarm system of an approved type shall be fitted to all enclosed cargo spaces including closed vehicle deck spaces. Where the detection system utilizes samples of atmosphere drawn from such cargo spaces provision shall be made to prevent, in the event of cargo leakage, the discharge of contaminated atmosphere through the sampling system into the space in which the detection apparatus is situated. A notice stating that the samples shall be discharged to the open air when cargoes giving off toxic fumes are being carried shall be permanently exhibited at the equipment.

3) Cargo ships of 500 gross tonnage and upwards and passenger ships constructed on or after 1 September 1984 but before 1 July 2002 need not comply with regulations 19.3.1, 19.3.5, 19.3.6, 19.3.9 provided that they comply with regulations 54.2.1, 54.2.5, 54.2.6, 54.2.9 as adopted by resolution MSC.1(XLV).

2.1 Water supplies

2.1.1 Arrangements shall be made to ensure immediate availability of a supply of water from the fire main at the required pressure either by permanent pressurization or by suitably placed remote starting arrangements for the fire pumps.

2.1.2 The quantity of water delivered shall be capable of supplying four nozzles of a size and at pressures as specified in regulation 4, capable of being trained on any part of the cargo space when empty. This amount of water may be applied by equivalent means to the satisfaction of the Administration.

2.1.3 Means of effectively cooling the designated under deck cargo space by copious quantities of water, either by a fixed arrangement of spraying nozzles, or flooding the cargo space with water, shall be provided. Hoses may be used for this purpose in small cargo spaces and in small areas of larger cargo spaces at the discretion of the Administration. In any event the drainage and pumping arrangements shall be such as to prevent the build-up of free surfaces. If this is not possible the adverse effect upon stability of the added weight and free surface of water shall be taken into account to the extent deemed necessary by the Administration in its approval of the stability information.

2.1.4 Provision to flood a designated under deck cargo space with suitable specified media may be substituted for the requirements on paragraph 2.13

2.5 Bilge pumping

Where it is intended to carry flammable or toxic liquids in enclosed cargo spaces the bilge pumping system shall be designed to ensure against inadvertent pumping of such liquids through machinery space piping or pumps. Where large quantities of such liquids are carried, consideration shall be given to the provision of additional means of draining those cargo spaces. These means shall be to the satisfaction of the Administration.

2.6 Personnel protection

2.6.1 Four sets of full protective clothing resistant to chemical attack shall be provided in addition to the fireman's outfits required by regulation 17. The protective clothing shall cover all skin, so that no part of the body is unprotected.

2.6.2 At least two self-contained breathing apparatuses additional to those required by regulation 17 shall be provided.

REFERENCES:

CLASS – DANGEROUS GOODS

ATTACHMENTS: No.

Kindest Regards,
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