PART II RULES FOR THE CONSTRUCTION AND CLASSIFICATION OF SHIPS IDENTIFIED BY THEIR MISSIONS

TITLE 12 CONTAINER SHIPS

SECTION 6 PIPING

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CHAPTER A
SCOPE

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A1. APPLICATION

A2. DEFINITIONS

A1. APPLICATION

100. Piping systems

101. The present Title contains additional requirements for fixed water fire systems and open top container ships.

200. List of documents

201. In addition to the documents required in Part II, Title 11, Section 3, in special Chapter E, Subchapter E14, the following are to be submitted for RBNA approval:

a. Fixed water spray system arrangement and specifications

b. Diagram for the drainage of fire fightin water from open top container hold spaces and special catergory spaces.

A2. DEFINITIONS

100. Definitions

101. "**Open-top containership**" means a containership especially designed so that one or more of the cargo holds need not be fitted with hatch covers.

102. "**Freeboard"** is the distance between the assigned load line and freeboard deck.

103. "**Freeboard deck**", for the purposes of chapters I and II of Annex I of the International Convention on Load Lines, 1966 (LL 1966), is the freeboard deck according to the LL 1966 as if hatch covers are fitted on top of the hatch coamings.

104. "**Maximum sustained speed**" is defined as the maximum service speed taking into account speed loss due to resistance increase in regular waves. Voluntary speed loss is not taken into consideration.

105. *"***Minimum ship manoeuvring speed**" is defined to be the minimum speed which maintains directional control and is consistent with the operating characteristics of the ship.

106. "**Green water**" is sea water other than spray shipped aboard the ship under normal operating conditions.

CHAPTER F
HULL PIPING SYSTEM

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F1. HOLD BILGE DEWATERING SYSTEMS AND FREEING PORTS

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F3. BALLAST
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F9. FIXED FIRE-FIGHTING SYSTEMS
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F10. DESIGN AND APPROVAL OF FIXED WATER-BASED FIRE-FIGHTING SYSTEMS FOR ROLL ON / ROLL OFF SPACES AND SPECIAL CATEGORY SPACES

F1. HOLD BILGE DEWATERING SYSTEM AND FREEING PORTS [IMO MSC.1/Circ.608 – Rev. 1)]

100. Hold bilge dewatering system and freeing ports

101. The bilge pumping system should have a required capacity to pump:

a. the maximum hourly rate of green water shipped in seagoing conditions as established by the comprehensive model testing specified (*);

b. an amount equal to rainfall of 100 mm/hour regardless of the installation of rain covers;

c. the amount of shipped green water measured during the seakeeping model tests for the dead ship condition in beam seas, multiplied by safety factor 2;

d. four-thirds of the amount of water required for fire-fighting purposes in the largest hold;

e. an amount equal to the capacity required for ships with closed cargo holds, whichever is the greater.

(*) The maximum hourly rate of ingress of green water in any one open hold determined from model testing should not exceed the hatch opening area multiplied by 400 mm/hour.

102. The pumping of hold bilges should be possible by at least three bilge pumps.

103. At least one of these pumps should have a capacity of not less than the required capacity as defined in F1.101 above and should be dedicated to bilge and ballast service only. It should be located in such a way that it will not be affected by a fire or other casualty to the space containing the pumps required in F1.104 and should be supplied from the emergency switchboard required by regulation II-1/43 of SOLAS 1974, as amended.

104. The combined output of at least two further pumps should not be less than the required capacity as defined in F1.101. These pumps should be supplied from the main source of electrical power required by regulation II-1/41 of SOLAS 1974, as amended, or any other source of power independent of the emergency switchboard required by regulation II-1/43 of SOLAS 1974, as amended.

105. The bilge pumping system, including the piping system, should incorporate sufficient redundancy features so that the system will be fully operational and capable of dewatering the hold spaces at the required capacity in the event of failure of any one system component.

106. The bilge pumping system should be arranged to be effective within the limiting angles of inclination required for the emergency source of electrical power by SOLAS 1974, as amended, and bilge wells should be readily accessible for cleaning.

107. All open cargo holds should be fitted with high bilge level alarms. The alarms should annunciate in the machinery spaces and the manned control location and be independent of bilge pump controls.

108. If the loss of suction prevents the proper functioning of the bilge system, special measures to prevent this should be considered, as for instance, the installation of level indicators.

109. Open cargo hold drain wells should be designed to ensure unobstructed discharge of water and easy access for cleaning under all conditions.

110. If provided, freeing ports should be fitted on both sides of each open cargo hold, subject to the following:

a. the number, size and location of the freeing ports on each side of each open hold should be sufficient to prevent the accumulation of water above the level defined in F1.101.f;

b. efficient means of closure to prevent the accidental ingress of water should be provided. Such means should be operated from above the freeboard deck. In the case of a ship operating in areas where icing is likely to occur, these arrangements should be suitable to enable the ports to operate efficiently under

F10. FIRE PROTECTION REQUIREMENTS FOR OPEN TOP CONTAINER SHIP HOLDS [MSC.1/Circ.608 – Rev. 1]

100. Fire protection requirements

101. The fire protection system for open-top container holds shall be based on the philosophy of containing the fire in the bay of origin and to cool adjacent areas to prevent structural damage.

102. Open-top container holds shall be protected by a fixed water spray system.

103. The system shall be capable of spraying water into the cargo hold from deck level downward.

104. The system shall be designed and arranged to take account of the specific hold and container configuration. If found necessary, the Administration may require a full-scale test.

105. The water spray system should be able to effectively contain a fire in the container bay of origin. the spray system shall be subdivided, with each subdivision to consist of a ring-line at deck level in an open cargo hold around a container bay.

106. The water spray system shall be capable of spraying the outer vertical boundaries of each container bay in an open cargo hold and of cooling the adjacent structure.

a. The uniform application density should be not less than 1.1 litres/min/m2.

b. At least one dedicated fire extinguishing pump for the hold water spray system with a capacity to serve all container bays in any one open-top container hold simultaneously shall be provided. The pump(s) shall be installed outside the open-top area.

c. The availability of water to the water spray system shall be at least 50% of the total capacity, with adequate spray patterns in the open-top container hold, and with any one dedicated pump inoperable.

d. For the case of a single dedicated water spray pump this may be accomplished by an interconnection to an alternative source from the weather deck.

107. Whenever a fire detection system is required in the open hold area, the fire detection system shall be designed and arranged to take account of the specific hold and container configuration and ventilation arrangement.

CHAPTER T
TESTS

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T4. FUNCTIONAL TEST OF DRAINAGE FACILITIES OPEN TOPO CONTAINER SHIPS

T5. TEST METHOD FOR FIXED WATER-BASED FIRE-FIGHTING SYSTEMS FOR ROLL ON / ROLL OFF SPACES AND SPECIAL CATEGORY SPACES

T4. FUNCTIONAL TEST OF DRAINAGE FACILITIES ON OPEN TOP CONTAINER SHIPS [Based on IMO MSC.1/Circ. 1320]

100. Scope

101. The drainage facilities on ro-ro passenger ships should be functionally tested before the ship enters service to verify that the capacity of the system is adequate. The drainage facilities on all ships should be periodically visually examined for blockage or other damage and should be flushed with fire hoses or similar means to verify that the system is functional, if obstructions are noted.

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