

Chapter 7.4

Stowage and segregation on container ships

Note: To facilitate familiarization with these requirements and to support training of relevant personnel, illustrations applicable to the segregation requirements on container ships are given in MSC.1/Circ.1440.

7.4.1 Introduction

7.4.1.1 The provisions of this chapter apply to the stowage and segregation of containers which meet the definition of a container within the terms of the *International Convention for Safe Containers, 1972* (CSC Convention), as amended, which are transported on deck and in the cargo holds of container ships or on deck and in the cargo holds of other types of ships provided that these stowage positions are properly fitted to give a permanent stowage of containers during transport.

7.4.1.2 For ships carrying containers in conventional cargo spaces not properly fitted for the permanent stowage of containers the provisions of chapter 7.6 apply.

7.4.1.3 For stowage of FISH MEAL, UNSTABILIZED (UN 1374), FISH MEAL, STABILIZED (UN 2216) and KRILL MEAL (UN 3497) in containers, the provisions of 7.6.2.7.2.2 also apply.

7.4.1.4 For stowage of AMMONIUM NITRATE (UN 1942), AMMONIUM NITRATE BASED FERTILIZER (UN 2067 AND 2071) in containers, the applicable provisions of 7.6.2.8.4 and 7.6.2.11.1 also apply.

7.4.2 Stowage requirements

7.4.2.1 Provisions for hatchless container ships

Dangerous goods shall only be transported in or vertically above hatchless container holds if:

- .1 the dangerous goods are permitted for under deck stowage as specified in the Dangerous Goods List; and
- .2 the hatchless container hold is in full compliance with the provisions of regulation II-2/19 of SOLAS, as amended, or regulation II-2/54 of SOLAS, as amended by the resolutions indicated in II-2/1.2.1, as applicable.

7.4.2.2 Provisions for ships with partially weathertight hatchway covers

7.4.2.2.1 Provisions for partially weathertight hatchway covers with effective gutterbars*

7.4.2.2.1.1 Partially weathertight hatchway covers fitted with *effective gutterbars** can be regarded as “resistant to fire and liquid” for the purpose of stowage and segregation of containers containing dangerous goods on container ships fitted with such hatchway covers. Additionally segregation requirements shall be in accordance with the requirements in paragraph 7.4.3.2.

7.4.2.2.1.2 When “not in the same vertical line unless separated by a deck” is required, containers containing dangerous goods shall not be stowed in any tier directly above a *clear gap** unless the cargo hold complies with the relevant requirements for the class and flashpoint of the dangerous goods in regulation II-2/19 of SOLAS 74, as amended, or regulation II-2/54 of SOLAS, as amended by resolutions indicated in II-2/1.2.1, as applicable. Additionally, containers containing incompatible dangerous goods shall not be stowed within the relevant *sensitive vertical lines** under deck.

7.4.2.2.2 Provisions for partially weathertight hatchway covers without effective gutterbars*

7.4.2.2.2.1 Where hatchway covers are *not fitted with effective gutterbars*, containers containing dangerous goods shall not be stowed on such hatchway covers, unless the cargo hold complies with the relevant requirements

* For definitions and details see MSC/Circ.1087 found in the IMDG Code Supplement.

for the class and flashpoint of the dangerous goods in regulation II-2/19 of SOLAS 74, as amended, or regulation II-2/54 of SOLAS, as amended by the resolutions indicated in II-2/1.2.1, as applicable.

- 7.4.2.2.2.2 Where hatchway covers are not fitted with *effective gutterbars*,* the following applies where stowage “not in the same vertical line” is required in 7.4.3.3.
- 7.4.2.2.2.3 When containers containing dangerous goods are stowed on deck, containers containing incompatible dangerous goods shall not be stowed within the relevant *sensitive vertical lines** of any *clear gap** on either side of the hatchway cover below deck.
- 7.4.2.2.2.4 When containers containing dangerous goods are stowed below deck within the relevant sensitive vertical lines of a clear gap, containers with incompatible dangerous goods shall not be stowed on the hatches above the hold.*

7.4.2.3 Provisions for containers with flammable gases and highly flammable liquids

- 7.4.2.3.1 In cargo ships of 500 gross tons or over and passenger ships constructed before 1 September 1984, and in cargo ships of less than 500 gross tons constructed before 1 February 1992, containers with flammable gases or with flammable liquids having a flashpoint of less than 23°C c.c, shall be stowed on deck only, unless otherwise approved by the Administration.
- 7.4.2.3.2 A container with flammable gases or flammable liquids having a flashpoint of less than 23°C c.c transported on deck shall be stowed at least 2.4 m horizontally and projected vertically away from any potential source of ignition.
- 7.4.2.3.3 A container under temperature control that is not of a certified safe type shall not be stowed under deck together with containers containing flammable gases or with liquids having a flashpoint of less than 23°C c.c.

7.4.2.4 Ventilation provisions

- 7.4.2.4.1 In cargo ships of 500 gross tons or over and passenger ships constructed before 1 September 1984, and in cargo ships of less than 500 gross tons constructed before 1 February 1992, containers with the following dangerous goods may be stowed under deck only if the cargo space is equipped with mechanical ventilation and if under deck stowage is permitted in the Dangerous Goods List:
- dangerous goods of class 2.1;
 - dangerous goods of class 3 with a flashpoint of less than 23°C c.c.;
 - dangerous goods of class 4.3;
 - dangerous goods of class 6.1 with a subsidiary hazard of class 3;
 - dangerous goods of class 8 with a subsidiary hazard of class 3; and
 - dangerous goods to which a specific stowage requirement requiring mechanical ventilation in column 16a of the Dangerous Goods List is assigned.

Otherwise containers shall be stowed on deck only.

- 7.4.2.4.2 The capacity of the mechanical ventilation (number of air changes per hour) shall be to the satisfaction of the Administration.

7.4.3 Segregation requirements

7.4.3.1 Definitions and application

- 7.4.3.1.1 Container space means a distance of not less than 6 m fore and aft or not less than 2.4 m athwartships.
- 7.4.3.1.2 The provisions for segregation between containers on board containerships with closed cargo holds and on board hatchless containerships are given in the tables in 7.4.3.2 and 7.4.3.3, respectively.

* For definitions and details see MSC/Circ.1087 found in the IMDG Code Supplement.

Table of segregation of containers on board container ships with closed cargo holds

Segregation requirement	Vertical		Horizontal						
	Closed versus closed	Closed versus open	Open versus open	Closed versus closed		Closed versus open		Open versus open	
				On deck	Under deck	On deck	Under deck	On deck	Under deck
"Away from" .1	One on top of the other permitted	Open on top of closed permitted	Not in the same vertical line unless segregated by a deck	No restriction	No restriction	No restriction	No restriction	One container space	One container space or one bulkhead
	Otherwise as for "open versus open"	As for "open versus open"		No restriction	No restriction	No restriction	No restriction	One container space	One container space
"Separated from" .2	Not in the same vertical line unless segregated by a deck	As for "open versus open"	Not in the same vertical line unless segregated by a deck	Fore and aft	Athwartships	Fore and aft	Athwartships	One container space	One bulkhead
				Athwartships	Fore and aft	Athwartships	One container space	One bulkhead	Two container spaces
"Separated by a complete compartment or hold from" .3	Not in the same vertical line unless segregated by a deck	As for "open versus open"	Not in the same vertical line unless segregated by a deck	Fore and aft	Athwartships	Fore and aft	Athwartships	One container space	Two bulkheads
				Athwartships	Fore and aft	Athwartships	Two container spaces	One bulkhead	Three container spaces
"Separated longitudinally by an intervening complete compartment or hold from" .4*	Prohibited	Prohibited	Prohibited	Fore and aft	Athwartships	Fore and aft	Athwartships	Minimum horizontal distance of 24 m	Two bulkheads
				Athwartships	Fore and aft	Athwartships	Minimum horizontal distance of 24 m	Prohibited	Prohibited

* Containers not less than 6 m from intervening bulkhead.

Note: All bulkheads and decks shall be resistant to fire and liquids.



7.4.3.3

Table of segregation of containers on board hatchless containerships

Segregation requirement	Vertical			Horizontal					
	Closed versus closed	Closed versus open	Open versus open	Closed versus closed		Closed versus open		Open versus open	
				On deck	Under deck	On deck	Under deck	On deck	Under deck
"Away from" .1	One on top of the other permitted	Open on top of closed permitted otherwise as for "open versus open"		No restriction	No restriction	No restriction	No restriction	One container space	One container space or one bulkhead
"Separated from" .2				No restriction	No restriction	One container space or one bulkhead	One container space	One container space	One container space
"Separated by a complete compartment or hold from" .3	Not in the same vertical line	As for "open versus open"	Not in the same vertical line	One container space	One container space	One container space	Two container spaces	Two container spaces and not in or above same hold	Two bulkheads
"Separated longitudinally by an intervening complete compartment or hold from" .4		Prohibited		Two container spaces and not in or above same hold	Two container spaces and not in or above same hold	One bulkhead	One bulkhead	Three container spaces and not in or above same hold	Two bulkheads
				Minimum horizontal distance of 24 m and not in or above same hold	Minimum horizontal distance of 24 m and not in or above same hold	One bulkhead and minimum horizontal distance of 24 m	Minimum horizontal distance of 24 m and not in or above same hold	Minimum horizontal distance of 24 m and not in or above same hold	Two bulkheads
				Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited

* Containers not less than 6 m from intervening bulkhead.

Note: All bulkheads and decks shall be resistant to fire and liquids.