

**PART II      RULES FOR THE CONSTRUCTION  
AND CLASSIFICATION OF  
VESSELS IDENTIFIED BY THEIR  
MISSION**

**TITLE 47      SUPPLY VESSELS**

**SECTION 1    NAVAL ARCHITECTURE**

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STANDARDS
- C      NAVIGATIONAL ENVIRONMENT  
– See Part II, Title 11, Section 1
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**CHAPTER A  
APPROACH**

**CHAPTER CONTENTS**

A1. APPLICATION

A2. DEFINITIONS

**A1. APPLICATION**

**100. Application**

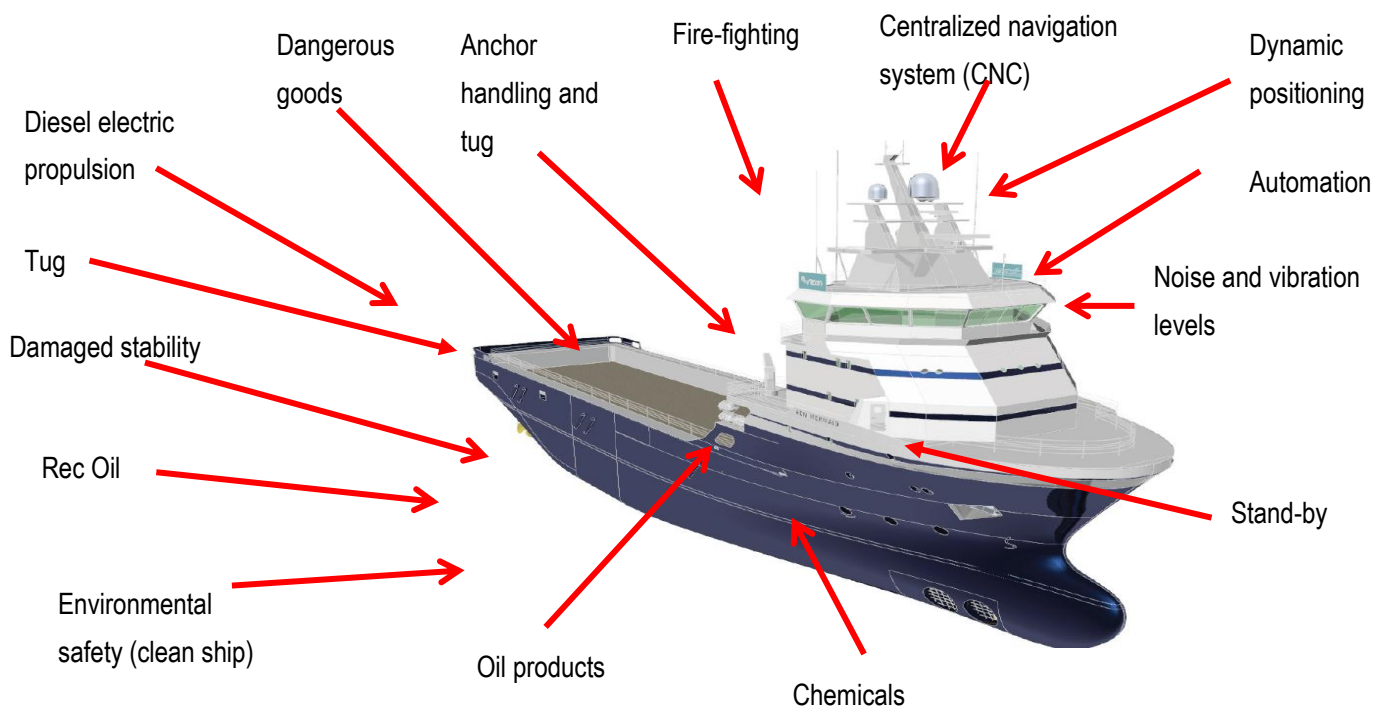
101. The present Title 47 applies to offshore supply vessels 24 meters and over, but not more than 100 meters in length for which the additional class notation “Supply” is assigned. The intact and damage stability of a vessel of more than 100 meters in length are to be in accordance with the applicable sections of the IMO IS Code 2008 as annended.

102. Supply vessels may be assigned additional class notations to “Supply” or other service notations covered by this and by other Titles of the Rules. In such a case, the specific rule requirements applicable to each additional service or class notations are to be complied with. (See figure F.A1.102.1 and Table T.A1.102.1).

103. For a vessel engaged in near-coastal voyages, relaxations from the requirements of this Title 47 may be permitted provided the operating conditions are, in the opinion of the RBNA, such as to render compliance with the present Title 47 requirements unreasonable or unnecessary.

104. The provisions in this Chapter do not regulate the transport of dangerous goods and marine pollutants in packaged form, including transport of dangerous goods in portable tanks.

**FIGURE F.A1.102.1 – CLASS AND SERVICE NOTATIONS NORMALLY ATTRIBUTED TO OFFSHORE SUPPLY VESSELS ACCORDING TO THEIR MISSIONS**



**TABLE T.A1.102.1 – CLASS AND SERVICE NOTATIONS NORMALLY ATTRIBUTED TO OFFSHORE SUPPLY VESSELS ACCORDING TO THEIR MISSIONS**

Note: the description of each Additional Class Notation or Service Notation is to be found in Part I, Title 01, Section 1, Chapter B of the Rules.

| <b>Title / Service notation – Part II of the Rules</b>                         | <b>Additional service features</b>      |
|--|---|
| Title 11, Section 1, H6  | EAV - Damage stability vessels          |
| Title 11, Section 5  | Diesel electric propulsion              |
| Title 11, Section 102 – Centralized Navigation System                          | CNC                                     |
| Title 35 – Oil recovery ships  | Rec-Oil ship Class 1                    |
|  | Rec-Oil ship Class 2                    |
| Title 42   | TUG (Towing)                            |
| Title 47 – Supply  | Oil products                            |
|  | Chemical products                       |
|  | AHTS - Anchor handling tug supply       |
|  | STBY – Safety standby and rescue vessel |
| Title 102 – Automation<br>(Title 52 in the 2008 edition of the Rules)          | Aut-A                                   |
|  | Aut-B                                   |
|  | Aut-C                                   |
|  | Aut-E                                   |
|  | Aut-F                                   |
|  | Aut-F + CNC                             |
| Title 103 – Dynamic positioning<br>(Title 53 in the 2008 edition of the Rules) | SPD0                                    |
|  | SPD1                                    |
|  | SPD2                                    |
|  | SPD3                                    |
| Title 104 –Ships intended for the carriage of dangerous goods (2014 edition)   | DG-P – in packaged form                 |
|  | DG B – in bulk form                     |
| Title 109 – Comfort noise and vibration levels (2014 edition)                  | COMF                                    |
| Title 110 – Environmental protection   | SMA                                     |
| Title 111 – Fire Fighting Ship (2014 edition)                                  | Fi-Fi 1 – class 1                       |
|  | Fi-Fi 2 – class 2                       |
|  | Fi-Fi – class 3                         |
|  | Fi-Fi Cap                               |

*Guidance*

An offshore supply vessel having fire-fighting capabilities, dynamic positioning, transporting liquid chemical products in bulk, transporting dangerous goods in solid or bulk packed form on deck and towing would be granted the class notation:

**✘ A1 O2 5 E SUPPLY TUG, Fi-Fi Class ..., DP-..., AUT-..., CHEMICAL, DG-...**

The additional class notation “AUT-...” is present because it is mandatory for DP vessels to have one of the additional class notations for automation.

If the vessel above instead of chemical products carried oil products, the class notation granted would be:

**✘ A1 O2 5 E SUPPLY TUG, Fi-Fi Class ..., DP-..., AUT-..., OIL PRODUCTS, DG-...**

A vessel destined to carry liquid products and dangerous cargoes in solid packed or bulk form on deck, with dynamic positioning and towing, would be granted the class notation:

**✘ A1 O2 5 E SUPPLY TUG, DP-..., AUT-..., CHEMICAL, DG-...**

An anchor handling vessel would be granted the class notation:

**✘ A1 O2 5 E AHTS**

This notation implies:  
AHTS = SUPPLY + TUG + ANCHOR HANDLING.

End of guidance

## A2. DEFINITIONS

### 100. Terms

101. In addition to the definitions in Part II, Title 11, Section 1, A.2, the following terms and definitions will be herein used:

102. **Cargo area** is that part of the ship where cargo and cargo vapours are likely to be present and includes cargo tanks, cargo pump-rooms, hold spaces in which independent tanks are located, cofferdams, ballast or void spaces surrounding integral cargo tanks and the following deck areas:

- a. within 3 m of a cargo tank installed on deck
- b. within 3 m of a cargo tank outlet in case of independent tanks installed below deck
- c. within 3 m of a cargo tank outlet in case of integral tanks installed below deck and separated from the weather deck by a cofferdam
- d. the deck area above an integral tank without an overlaying cofferdam plus the deck area extending transversely and longitudinally for a distance of 3 m beyond each side of the tank
- e. within 3 m of any cargo liquid or vapour pipe, flange, cargo valve, gas or vapour outlet, or entrance or ventilation opening to a cargo pump-room.

Note: Cargo area definition is not applicable for supply vessels intended to carry substances with FP>60°C.

103. **Gas hazardous zone** – Comprises all the spaces or areas as follows:

- a. cargo tanks and containers for storage of cargo;
- b. pumps or compressor rooms;
- c. cofferdams alongside cargo tanks and cargo containers;
- d. double bottom or keel ducts located under the cargo tanks;
- e. enclosed or partially enclosed spaces located directly over cargo tanks;
- f. enclosed or partially enclosed spaces located directly over pump rooms or cofferdams adjacent to cargo tanks or containers that are not separated from these spaces by a gas-tight deck or effectively ventilated;
- g. enclosed or partially enclosed spaces where pipes, valves or other equipment for cargo handling are located;
- h. zone on weather deck located within a radius of 10 meters, horizontally, from gas exit vents of the cargo tanks and cargo containers;

- i. the weather deck above the cargo area including 3 meters forward and aft boundaries of cargo tanks, and at a height of 2.4 meters above the weather deck;
- j. partially closed zones and spaces located in the weather deck and at 3 meters from: scuttles, any other openings in tanks and cargo containers, any cargo handling pumps that are not located in a space reserved for this purpose and from the ends of loading and unloading devices;
- k. spaces for storage of cargo hoses (if any).

### 104. Hazardous and noxious substances:

For the purpose of the regulations of this Chapter, Noxious Liquid Substances shall be divided into four categories as follows:

- a. **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;
- b. **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;
- c. **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;
- d. **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, Y or Z as defined in regulation 6.1 of this Annex because they are, at present, 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. 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 Annex.

105. **Integrated Tank:** cargo space belonging to the ship's hull, that can undergo the same efforts and

structural loads of the hull structure, and which is usually essential to the integrity of the ship's hull.

106. **IS Code** means the Code on Intact Stability for all Types of Ships Covered by IMO Instruments, as amended.

107. **LHNS Handling of Limited Amounts of Hazardous and Noxious Liquid Substances in Bulk Guideline:** Supply Resolution IMO A.763(16) as amended by Resolutions MSC.236(82) and MEPC.158(55) for the transportation of limited quantities of toxic or hazardous liquids in bulk, relevant to supply vessels.

108. **Near coastal voyage** means a voyage in the vicinity of the coast of a State as defined by that Administration of that State.

109. **Offshore support vessel** means a vessel:

- a. which is primarily engaged in the transport of stores, materials and equipment to offshore installations; and
- b. which is designed with accommodation and bridge erections in the forward part of the vessel and an exposed cargo deck in the after part for the handling of cargo at sea.

#### Guidance

#### Different types of offshore supply vessels

Offshore supply vessels are typically designated by categories indicating their type of mission, which are not class or service notations. Each type of vessel described in this Guidance will be assigned class, service or additional class notations according to their characteristics, indicated in Table T.A1.105.1 above.

#### a. PLATFORM SUPPLY VESSEL

A **Platform supply vessel** (often abbreviated as **PSV**) is a ship specially designed to supply offshore oil platforms. These ships range from 20 to 100 meters in length and accomplish a variety of tasks. The primary function for most of these vessels is transportation of goods and personnel to and from offshore oil platforms and other offshore structures.

In the recent years a new generation of Platform Supply Vessel entered the market, usually equipped with Class 1 or Class 2 Dynamic Positioning System.

#### Cargo

A primary function of a platform supply vessel is to transport supplies to the oil platform and return other cargoes to shore. Typically, the cargoes that a PSV vessel may usually carry are listed below:

- drilling mud
- pulverized cement
- diesel fuel
- brine
- potable water

- non-potable water
- chemicals used in the drilling process

#### Deck cargoes

- Common and specialty tools
- Deck general cargo
- Dangerous goods in solid form

#### Special tasks (secondary missions, or service notations)

- firefighting capability and fire monitors for fighting platform fires
- oil containment and recovery equipment to assist in the cleanup of a spill at sea
- Class 1 or Class 2 Dynamic Positioning System (Note: DP systems require one of the additional class notations for automation)

**b. TUG SUPPLY (TUG):** a supply vessel in conformity with Title 47 and equipped for towing in conformity with Part II, Title 42.

#### c. ANCHOR HANDLING TUG SUPPLY (AHTS)

**Anchor Handling Tug Supply (AHTS)** vessels are mainly built to handle anchors for oil rigs, tow them to location, anchor them up.

AHTS vessels differ from Platform supply vessels (PSVs) in being fitted with winches for towing and anchor handling, having an open stern to allow the decking of anchors, and having more power to increase the bollard pull. The machinery is specifically designed for anchor handling operations. They also have arrangements for quick anchor release, which is operable from the bridge or other normally manned location in direct communication with the bridge. The reference load used in the design and testing of the towing winch is twice the static bollard pull.

#### d. SAFETY STANDBY / UTILITY VESSELS

Developed to provide standby, rescue & emergency duties, and to aid closely in the installation and preparation of rescue operations such as helicopter landing and take offs, and helping personnel working over side and near or in the water.

Considering the examples given in the "guidance notes" to item 105, the following class notations would correspond to PSV vessels:



**✘ A1 O2 5 E SUPPLY TUG, Fi-Fi Class 1, DP-2, AUT-E, CHEMICAL, DG-P,**

**✘ A1 O2 5 E SUPPLY TUG, Fi-Fi Class 1, DP-2, AUT-E, OIL PRODUCTS, DG-P,**

**✘ A1 O2 5 E SUPPLY TUG, DP-2, AUT-E, CHEMICAL, DG-P,**

*The following would correspond to an AHTS vessel:*

**✘ A1 O2 5 E AHTS**

*All four would be considered as TUG vessels.*

*End of guidance*

## **CHAPTER B DOCUMENTS, REGULAMENTATIONS AND STANDARDS**

### **CHAPTER CONTENTS**

**B1. DOCUMENTS TO THE RBNA**

**B2. REGULATION**

**B3. TECHNICAL STANDARDS – See Title 11**

### **B1. DOCUMENTS TO THE RBNA**

**100. Documents for reference of the classification**  
- See Title 11

**200. Documents for approval**

201. In addition of the documents required in Part II Title 11, the following plans are to be submitted for approval, where applicable:

- a. Structural details and structural arrangements of the independent tanks for mud, cement or other loads;
- b. Scuttles and windows containing information on type of glass, frames and deadlights;
- c. Arrangement of entrances, air inlets and openings to accommodation service, machinery spaces and control stations
- d. Foundations for special equipment for cargo handling such as anchor winches, "A" frame, cranes, furniture, etc.;
- e. Arrangement of cargo areas on the deck, including areas reserved for hazardous goods;

- f. Diagrams of loading and unloading liquid cargo systems;
- g. Diagrams of loading and unloading solid cargo systems, for example, cement;
- h. Diagrams of vents and ventilation systems for liquid cargo;
- i. Lashing and securing arrangements, and
- j. Calculations of intact and damage stability as described in chapter H of this Part II, Title 47.

**300. Documents for the construction**  
- See Title 11

**400. Statutory documents**

401. For Statutory Certification of ships under Brazilian Flag having less than 500 GT, the plans listed in NORMAM 01, Chapter 3 are to be submitted for approval.

402. For Statutory Certification of ships under foreign Flags having less than 500 GT, the plans required by the National Administration are to be submitted for approval or, in the absence of such plans, the requirements of B1.403 are to be complied with.

403. For Statutory Certifications of ships of 500 GT and over, in addition to the mentioned in item B1.401 above the plans containing the information of IMO resolution A.1053(27) as amended are to be submitted for approval, in accordance with Article VIII of the International Convention for the Safety of Life at Sea SOLAS.

### **B2. REGULATION**

**100. Regulations of the National Administration**

101. For ships under the Brazilian Flag, the present Rules include compliance with the requirements of NORMAM 01

102. The RBNA may, by agreement, certify compliance with other national regulations.

**200. Regulation of other national bodies**  
- See Title 11

**300. International Regulations**

301. For ships with  $GT \geq 500$  and foreign Flags, the present rules include compliance with the requirements of resolutions and conventions of the International Maritime Organization - IMO, as applicable according to the type of ship, notably IMO Resolution MSC.235(82), "Adoption of the guidelines for the design and construction of offshore supply vessels". 2006.

302. The application of specific regulations will be given in each Chapter of this Part II, Title 47.

**400. Unified Regulations**  
- See Title 11

**CHAPTER C**  
**NAVIGATION ENVIRONMENT**

CHAPTER CONTENTS

- C1. NAVIGATION ZONES
  - C2. VESSEL'S MOVEMENTS
  - C3. ENVIRONMENT PRESERVATION
  - C4. ADDITIONAL CLASS NOTATION "SMA" -  
SAFETY OF THE ENVIRONMENT
- 

**C3. ENVIRONMENT PRESERVATION**

**100. Compliance with regulations**

101. For ships of less than 500 GT under the Brazilian Flag, the application of the present Rules implies the compliance with regulatory requirements for environmental protection (Law 9966), including the MARPOL and compliance with the requirements of Sanitary Surveillance Agency - ANVISA, where applicable.

102. For ships of less than 500 GT under foreign Flags, National Regulations apply, in the absence of which, MARPOL Convention regulations apply.

103. For ships of 400 GT and over the MARPOL Convention regulations apply.

**C4. ADDITIONAL CLASS NOTATION "SMA" -  
SAFETY OF THE ENVIRONMENT**

See Part II, Title 110.

**CHAPTER D**  
**ACTIVITIES/SERVICES**

CHAPTER CONTENTS

- D1. ADDITIONAL CLASS NOTATION  
"PETROLEUM PRODUCTS"
  - D2. ADDITIONAL CLASS NOTATION  
"CHEMICALS"
  - D3. CONDUCTION
- 

**D1. ADDITIONAL CLASS NOTATION**  
**"PETROLEUM PRODUCTS"**

**100. Assignment**

101. The additional class notation "**Petroleum Products**" is to be assigned to supply vessels intended to the carriage of petroleum products with any flash point in dedicated tanks.

102. The total capacity of cargo tanks designed to carry oil product having any flashpoint is to be less than 1000 m<sup>3</sup>. Ships carrying a volume of petroleum products exceeding 1000 m<sup>3</sup> are subject to Part II, Title 32 of the present Rules and to MARPOL regulations.

**D2. ADDITIONAL CLASS NOTATION**  
**"CHEMICALS"**

**100. Attribution**

101. The additional class notation "Chemicals" will be assigned to supply vessels intended to carry of harmful chemicals or hazardous goods that comply with the requirements of IMO Resolution A.673 (16) "*Guidelines for the Transport and Handling of Limited Amounts of Hazardous and Noxious Liquid Substances in Bulk in Offshore Support Vessels*" (LHNS), as amended by Resolutions MSC.236(82) and MEPC.158(55)

102. In compliance with the above item D2.101, the products to be transported may be:

- a. Flammable liquids in limited amounts
- b. Harmful or hazardous liquids in limited amounts (less than 800 m<sup>3</sup>) listed in Tables T.D2.101.1 and T.D2.101.2 below and other goods that may be added to this list, being the original table reproduced below

**TABLE T.D2.101.1 – TABLE OF PERMITTED PRODUCTS**

| <b>PRODUCT</b>   | <b>Flammability</b>      |
|--|--------------------------|
| Oil-based mud containing mixtures of products listed in chapters 17 and 18 of the IBC Code and the MEPC.2/Circular and permitted to be carried under paragraph 1.2 of these Guidelines   | No                       |
| Water-based mud containing mixtures of products listed in chapters 17 and 18 of the IBC Code and the MEPC.2/Circular and permitted to be carried under paragraph 1.2 of these Guidelines | No                       |
| Drilling Brines, including:<br>Sodium Chloride Solution<br>Calcium Bromide Solution<br>Calcium Chloride Solution   | No<br>No<br>No<br>No     |
| Calcium nitrate/Magnesium nitrate/Potassium chloride solution<br>Calcium Nitrate Solution (50% or less)<br>Drilling brines (containing zinc salts)                                       | No<br>No<br>No           |
| Potassium Formate Solution<br>Potassium Chloride Solution<br>Ethyl Alcohol<br>Ethylene Glycol  | No<br>No<br>Yes<br>No    |
| Ethylene Glycol monoalkyl ether<br>Methyl Alcohol<br>Acetic acid<br>Formic acid  | Yes<br>Yes<br>Yes<br>Yes |
| Hydrochloric Acid<br>Hydrochloric-hydrofluoric mixtures containing 3% or less Hydrofluoric acid<br>Sodium Silicate Solution  | No<br>No<br>No           |
| Sulphuric Acid<br>Triethylene Glycol<br>Toluene<br>Xylene  | No<br>Yes<br>Yes<br>Yes  |
| Liquid carbon dioxide<br>Liquid nitrogen<br>Noxious liquid, NF, (7) n.o.s.<br>(trade name ..., contains ...) ST3, Cat. Y   | No<br>No<br>No           |
| Noxious liquid, F, (8) n.o.s.<br>(trade name .., contains .) ST3, Cat. Y<br>Noxious liquid, NF, (9) n.o.s.<br>(trade name ., contains .) ST3, Cat. Z                                     | Yes<br><br>No            |
| Noxious liquid, F, (10) n.o.s.<br>(trade name ., contains .) ST3, Cat. Z<br>Noxious liquid, (11) n.o.s.<br>(trade name ., contains .) Cat. Z   | Yes<br><br>No            |
| Non-noxious liquid, (12) n.o.s.<br>(trade name ., contains .) Cat. OS  | No                       |

**TABLE T.D2.101.2 TABLE OF PERMITTED CARGOES**

| <b>CARGO</b>   | <b>Annex II, MARPOL<br/>73/78<br/>pollution category</b> | <b>Flammability</b> |
|--|--|---------------------|
| Acetic acid (aqueous solution)   | C(D)   | Yes                 |
| Formic acid (aqueous solution)   | D  | Yes                 |
| Hydrochloric acid  | D  | No                  |
| Hydrochloric-hydrofluoric mixtures containing 3% or less hydrofluoric acid | D  | No                  |
| Sulphuric acid   | C  | No                  |
| Toluene  | C  | Yes                 |
| Xylene   | C  | Yes                 |
| Zinc bromide brine   | (A)  | No                  |
| Liquid carbon dioxide  | N/A  | No                  |
| Liquid nitrogen  | N/A  | No                  |

**D3. CONDUCTION**

**100. Qualified Crew**

101. The application of these Rules requires vessels conducted by qualified, trained and capable crew.

**CAPÍTULO E  
CONFIGURATIONS**

**CHAPTER CONTENTS**

E1. ADEQUATION OF THE HULL – See Title 11

E2. ARRANGEMENT OF COMPARTMENTS FOR ALL SUPPLY VESSELS

E3. ARRANGEMENT OF COMPARTMENTS OF SHIPS WITH NOTATION "PETROLEUM PRODUCTS"

E4. ARRANGEMENT OF COMPARTMENTS OF SHIPS WITH NOTATION "CHEMICALS"

**E2. ARRANGEMENT OF COMPARTMENTS FOR ALL SUPPLY VESSELS**

**100. Subdivision and location of cargo tanks**

101. **Location of cargo tanks and cargo storage containers** – All the cargo tanks and storage containers are

to be located aft of the forward collision bulkhead and forward of the aft collision bulkhead.

102. **Portable independent tanks** - portable independent tanks may be installed on weather decks as cargo storage tanks provided that the following conditions are met:

- a. The portable tanks are to be securely fastened to the hull structure.
- b. The zone of the weather deck where the portable tanks are fixed is to be provided with coaming for containment of cargo (which can be removable) to prevent any spills or leaks flowing into safe areas for gas.
- c. To be provided space enough between the tanks and the ship's side to allow passage of crew and fire-fighting equipment.
- d. The cargo handling system attending to the portable tank is to be such that no pressures should be generated exceeding those specified for the cargo tanks.

103. Provisions are to be made so that every portable tank is easily identifiable by means of the markings in the adequate locations.

104. **Access to the compartments below the freeboard deck** – The access to the compartments below the freeboard deck is to be made from a position above the deck of the first level of the superstructure, or above an equivalent level if there is no superstructure.

105. Alternatively, an indirect access is to be provided from a compartment provided with an external door with

sill not less than 600 mm high and from an automatic-closing gas-tight door, with the sill not less than 380 mm high.

106. The machinery spaces and other working and living spaces in the hull should be separated by watertight bulkheads.

107. Arrangements made to maintain the watertight integrity of openings in watertight subdivisions should comply with the relevant provisions for cargo ships contained in Part II, Title 11, Section 3 of the Rules.

108. A collision bulkhead should be fitted that complies with the provisions for cargo ships of Part II, Title 11, Section 1 of the Rules.

109. An after peak bulkhead should be fitted and made watertight up to the freeboard deck. The afterpeak bulkhead may, however, be stepped below the freeboard deck, provided the degree of safety of the vessels as regards subdivision is not thereby diminished.

### **E3. ARRANGEMENT OF THE COMPARTMENTS OF SHIPS WITH NOTATION "PETROLEUM PRODUCTS"**

#### **100. Cargo tanks**

101. The aggregate quantity of bulk liquids identified in D2.103 is to be less than 1000 m<sup>3</sup> and not to exceed a volume, in m<sup>3</sup>, equal to 40% of the unit's deadweight calculated at a cargo density of 1,0. The Society may permit carriage of more than the maximum amount specified above, provided that the survival capability requirements of Chapter 2 of the IBC Code or IGC Code are complied with.

102. Tanks containing cargo or residues of cargo subject to the provisions of the Guidelines should be segregated from machinery spaces, propeller shaft tunnels, if fitted, dry cargo spaces, accommodation and service spaces and from drinking water and stores for human consumption, by means of a cofferdam, void space, cargo pump-room, empty tank, oil fuel tank, or other similar space. On-deck stowage of independent tanks or installing independent tanks in otherwise empty hold spaces should be considered as satisfying this requirement.

102. Cargoes which react in a hazardous manner with other cargoes or oil fuels should:

- a. be segregated from such other cargoes or oil fuels by means of a cofferdam, void space, cargo pump-room, pump-room, empty tank, or tank containing a mutually compatible cargo;
- b. have separate pumping and piping systems which should not pass through other cargo tanks containing such cargoes, unless encased in a tunnel; and
- c. have separate tank venting systems.

#### **200. Segregation requirements for integral tanks**

201. Where not bounded by bottom shell plating, fuel oil tanks, a cargo pump-room or a pump-room, the cargo tanks should be surrounded by cofferdams. Tanks for other purposes (except fresh water and lubricating oils) may be accepted as cofferdams for these tanks.

202. For access to all spaces, the minimum spacing between cargo tank boundaries and adjacent ship's structures should be 600 mm.

203. Cargo tanks may extend to the deck plating, provided dry cargo is not handled in that area. Where dry cargo is handled on the deck area above a cargo tank, the cargo tank may not extend to the deck plating unless a continuous, permanent deck sheathing of wood or other suitable material of appropriate thickness and construction is fitted to the satisfaction of RBNA.

204. Cargoes subject to this Subchapter E3 should not be carried in either the fore or aft peak tanks.

205. For pollution hazard only substances having a flashpoint exceeding 60°C (closed cup test) RBNA may waive the arrangements referred to in H6.102 and H6.103 provided that the segregation requirements for accommodation spaces, drinking water and stores for human consumption are observed. Additionally, H6.201 and H6.202 need not be applied.

#### **200. Simultaneous loading of petroleum products and dry cargo**

201. In general, the simultaneous loading of dry cargo and petroleum products with any flash point is not permitted.

202. However, dry cargo and petroleum products with flash point exceeding 43°C (closed cup test) can be loaded simultaneously without particular restrictions provided that the temperature in the spaces adjacent to the cargo tank or storage container is at least 10 ° C lower than the flash point of the petroleum products.

203. When petroleum products are loaded into cargo storage containers installed on weather decks provisions are to be made so to provide adequate protection against accidental impact of dry cargo loaded in the same area

#### **300. Arrangement of the accesses to ships with additional class notation "Petroleum Products"**

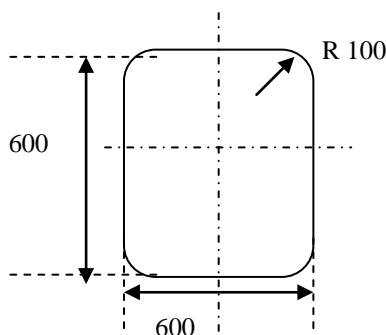
301. The openings for access to cofferdams, double ship-sides, double-bottom and other accessible spaces located in the cargo zone are to be made on the deck and meet the following requirements:

- a. allow that the locations to which they give access could be inspected and thoroughly cleaned;

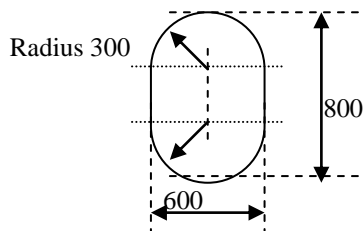
- b. allow that a person bearing a breathing apparatus to enter and exit the room without difficulties;
- c. allow the removal of an injured or unconscious person without difficulties.

302. The dimensions of access openings, manholes or horizontal scuttles, doors are to have a minimum section of  $0.36 \text{ m}^2$  and minimum size of  $600 \times 600 \text{ mm}$ .

- a. The dimensions of access openings, manholes or vertical scuttles are to have a minimum section of  $0.48 \text{ m}^2$  and minimum size of  $600 \times 800 \text{ mm}$ . at a height of less than  $600 \text{ mm}$  from the bottom plating, unless steps or other type of support be installed.
- b. The term "minimum size larger than  $600 \times 600 \text{ mm}$ " means that such openings are to have radii of  $100 \text{ mm}$  maximum.



- c. The term "minimum size larger than  $600 \times 800 \text{ mm}$ " includes also openings with dimensions below:



303. Smaller openings may be approved provided they are submitted to the Administration, who is to determine whether the feasibility to pass through these openings or the removal of injured person is satisfactory.

304. The cargo tank openings are to be on the deck, in the cargo zone.

305. The coamings are to have a height not less than  $500 \text{ mm}$ .

306. The manhole covers giving access to cargo tanks are to be able to withstand a pressure and conformity with the pressure testing of tanks set out in Part II, Title 32, Section 2, Chapter T.

307. The openings that are normally used during loading and unloading operations are to be of a type that does not produce sparks when operating.

308. Openings for access to gas-safe locations below the weather deck, located less than  $10 \text{ meters}$ , but more than  $3 \text{ meters}$  from gas vent exits in cargo tanks and storage of products may be used only as a means of emergency exit of usually manned spaces, or as access to the spaces usually unmanned, provided that the relevant doors are kept permanently closed when the ship is not gas free.

309. In such cases, appropriate signs are to be fixed in the vicinity of such openings.

#### E4. ARRANGEMENT OF COMPARTMENTS OF SHIPS WITH NOTATION "CHEMICALS"

##### 100. Location of the cargo tanks

101. The cargo tanks containing products that are listed in Table T.A1.401 are to be  $760 \text{ mm}$  measured inboard from the side of the vessel perpendicular to the centreline at the level of the summer load waterline.

102. The cargo tanks may extend up to the deck plating provided that dry cargo is not handled in this region.

##### 200. Dry cargo handling over cargo tanks

201. Where dry cargo is handled above cargo tanks, the tank cannot extend up to the deck plating unless a permanent lining of wood or other material of suitable thickness and construction is installed to RBNA's discretion.

##### 300. Accommodations and service spaces

301. Accommodations or service spaces are not to be located in the cargo area.

##### 400. Segregations

401. Cargoes are not allowed to be carried in the FWD and AFT peak tanks.

402. **Cargo segregation in relation to the fuel oil and other loads:** Loads that react dangerously with other loads or with fuel oil are to meet the requirements below:

- a. are to be segregated from the other loads or fuel oil by means of a cofferdam, void space, cargo pump room, void tank or tank containing a mutually compatible load;
- b. are to be provided with separate pumping and piping systems that are not to pass through other

cargo tanks containing the loads with which they react dangerously, unless embedded in a tunnel.

c. are to be fitted with separate vent systems.

**403. Segregation of the cargo in relation to other spaces**

Tanks containing cargo residues of the products listed on T.D2.101 are to be segregated from machinery compartments, shaft line tunnels, dry cargo compartments, accommodation or service compartments containing potable water and provision stores for human consumption, by means of cofferdam, void space, void tank, fuel oil tank or other similar compartments.

404. The storage of independent tanks on deck or the installation of independent tanks in hold spaces which are otherwise empty is to be regarded as satisfactory.

405. The floors and decks under storage tanks, pumps and piping for acids are to have lining or painting of acid resistant material extending to a minimum height of 500 mm over the adjacent bulkheads or coamings. In addition:

- a. Access hatches or other openings in such floors or decks are to be fitted with coamings of a minimum height of 500mm.
- b. If the RBNA determine that this coaming height is not feasible, a lower coaming height might be considered.

**406. Substances with flash point over 60°C** For substances offering only the risk of pollution having a flash point exceeding 60 ° C the RBNA may exempt the arrangements mentioned in E4.403 and E4.601 provided that the segregation requirements for accommodation spaces, potable water and store rooms for consumption of humans are observed. Additionally, the requirements of clause E4.701 need not be met.

**500. Tank openings and connections**

501. The openings and connections of tanks are to end above the weather deck. They are to be located at the top of the tanks, except for connections to the pump room.

502. Unless they are located more than 7 meters away from the cargo zone, the local accesses and openings of superstructures are not to be directed towards the "cargo zone". The doors that open to the outside, if not located within a recess at least equal to the door's width, are to be provided with hinges on the side of the cargo area.

503. Access doors for rooms not intended for accommodations such as store rooms, cargo control space, may be located within the zone of 7 meters specified above provided that the ends of the spaces are insulated with standard A-60.

504. Windows and portholes located within the zone of 7 meters specified above are to be of the fixed type, and scuttles and windows on the first level of the main deck are to be fitted with combat covers.

505. The openings for ventilation of accommodation, service and machinery compartments, cargo control room are to be designed and constructed so to as prevent the penetration of hazardous vapors into these compartments.

506. The regulations contained in the items E4.502 E4.505 above may be exempted for liquid cargo with a flash point exceeding 60 ° C offering only risk of pollution.

**600. Cargo pipe systems**

601. The cargo piping is not to pass through accommodation, service and machinery spaces or other spaces which are not a pump room.

**700. Cofferdams**

701. Cargo tanks are to be surrounded by cofferdams except when adjacent to the hull, fuel oil tanks or pump rooms.

702. Tanks for other purposes (except freshwater tanks and lubricating oil) may be accepted as cofferdams.

**800. Ventilators**

801. The ventilators of the machinery spaces are to be installed above the deck of the superstructure, or above the equivalent level when there is no deck of the superstructure.

**900. Arrangement of access for vessels with additional class notation "Chemicals"**

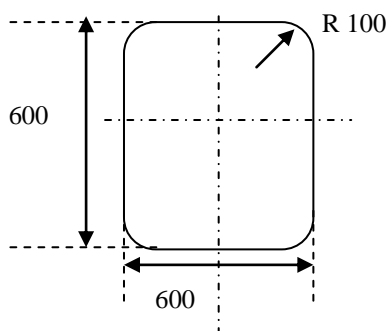
901. Openings for access to cofferdams, double sides, double bottom and other accessible spaces located in the cargo zone are to be made on the deck and meet the following requirements:

- a. allow the locations to which they give access to be inspected and thoroughly cleaned;
- b. allow a person bearing a breathing apparatus to enter and exit the room without difficulties;
- c. allow the removal of an injured or unconscious person without difficulties.

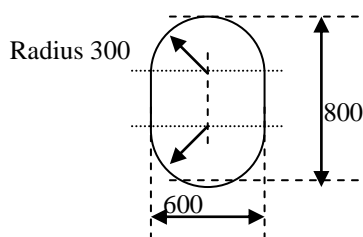
902. The dimensions of access openings, manholes or horizontal scuttles, doors are to have a minimum section of 0.36 m<sup>2</sup> and minimum size of 600 x 600 mm.

The dimensions of access openings, manholes or vertical scuttles are to have section of at least 0.48 m<sup>2</sup> and minimum size of 600 x 800 mm, at a height of less than 600 mm from the bottom plating, unless steps or other type of support be installed.

The term "minimum gap larger than 600 x 600 mm" means that such openings are to have radius of 100 mm maximum.



The term "minimum opening greater than 600 mm x 800" also includes openings in the following dimensions:



902. Smaller openings may be approved provided they are submitted to the Administration, which is to determine whether the ability to pass through these openings or the removal of injured person is satisfactory.

903. The cargo tank openings are to be on the deck, in the cargo area.

904. The coamings are to have the height required by the NORMAM 01, Chapter of Freeboard, but not less than 500 mm.

905. The covers of access hatches for cargo tanks are to be able to withstand a pressure and conformity with the pressure testing of tanks set out in Part II, Title 32, Section 2, Chapter T.

906. The openings that are normally used during loading and unloading operations are to be of a type that does not produce sparks when operating.

## CHAPTER H CARGO LOADING CONDITIONS, BUOYANCY AND STABILITY

### CHAPTER CONTENTS

- H1. FREEBOARD - See Title 11
- H2. LIGHT WEIGHT - See Title 11
- H3. CARGO LOADING CONDITIONS
- H4. FLOATABILITY, SUBDIVISION OF THE HULL  
- See Title 11
- H5. INTACT STABILITY
- H6. DAMAGE STABILITY

### H5. INTACT STABILITY

#### 100. Weight distribution

- See Title 11

#### 200. Free surface

- See Title 11

#### 300. Stability assessment

301. For ships with  $GT < 500$ , the requirements of Chapter 727 a) NORMAM 01 are to be met for Brazilian Flag vessels, and the National Administration requirements for foreign Flag vessels. If there are no National Administration requirements, item H6.303 is to be complied with.

302. Vessels that do not meet fully the requirements of Chapter 727a) NORMAM of 01 may alternatively have its intact stability criteria assessed by the Alternate Criteria of Chapter 727b) of NORMAM 01.

303. Vessels with  $GT \geq 500$  must comply with:

- a. IMO Intact Stability Code (IS Code) Part A Chapter 2 as amended.

304. Damaged stability calculations shall be in compliance with:

- a. IMO Resolution MSC.235(82) as amended, Chapter 2

Note: Reference should be made to Appendix 1 of the IS Code for operational matters related to stability criteria.

#### 400. Additional criteria

401. The load line at the stern should be at least 0.005 L in all operating conditions.



## 500. Factors of influence

501. The stability criteria mentioned in paragraphs H5.301 to H5.303 above provide minimum values; there is no recommendation as to maximum values. However, it is recommended to avoid excessive values since the forces of acceleration could be harmful to the vessel, the equipment and the safe loading of the cargo.

502. Where stabilizing devices are installed in the rolling of the ship, the stability criteria set out in paragraphs H5.301 to H5.303 above are to be maintained whenever the devices are in operation.

## 600. Assumptions for calculating load conditions

601. If the vessel has cargo tanks, the full load conditions should be extended, assuming first the cargo tanks filled to full load conditions and then empty cargo tanks for this condition.

602. If ballast is required for any load condition, the additional diagrams are to be calculated taking into account the ballast, the amount of the arrangement which is to be clearly stated in the information on stability.

603. When there is a cargo of pipes on deck a certain amount of water trapped in and around the pipes is to be considered as follows:

- a. The liquid volume is to be considered as a percentage of the internal volume of the pipes plus the volume between the pipes.
- b. This volume is to be 30% when the freeboard amidships is equal to or less than 0.015 L and 10% if the freeboard amidships is equal to or greater than 0.030 L.
- c. For intermediate values of the freeboard amidships, the percentage can be obtained by linear interpolation.
- d. In assessing the amount of trapped water, the RBNA can take into account the positive or negative sheer aft, trim and area of operation of the ship.

## 700. Constructional precautions against capsizing

701. Access to the machinery space should, if possible, be arranged within the forecastle. Any access to the machinery space from the exposed cargo deck should be provided with two weather tight closures. Access to spaces below the exposed cargo deck should preferably be from a position within or above the superstructure deck.

702. The area of freeing ports in the side bulwarks of the cargo deck should at least meet the requirements of regulation 24 of the International Convention on Load Lines, 1966 or the Protocol of 1988 relating thereto, as amended, as applicable. The disposition of the freeing ports should be carefully considered to ensure the most effective drainage of water trapped in pipe deck cargoes or in recesses at the after

end of the forecastle. In vessels operating in areas where icing is likely to occur, no shutters should be fitted in the freeing ports.

703. Special attention should be given to adequate drainage of pipe stowage positions having regard to the individual characteristics of the vessel.

704. However, the area provided for drainage of the pipe stowage positions should be in excess of the required freeing port area in the cargo deck bulwarks and should not be fitted with shutters.

705. A vessel engaged in towing operations should be provided with means for quick release of the towing hawser.

706. A vessel when engaged in a towing operation is not to carry cargo on deck. However, a limited amount of cargo may be accepted in case it is properly lashed and does not endanger the safe working nor impede the proper functioning of the towing equipment.

## 800. Alternative stability criteria

801. The stability criteria given in H5.303 should apply to all offshore supply vessels except those having characteristics for which compliance with H5.303 is impracticable.

802. The following equivalent criteria should be applied where a vessel's characteristics render compliance with H5.303 impracticable:

- a. the area under the curve of righting levers (GZ curve) should not be less than 0.07 metre-radians up to an angle of 15° when the maximum righting lever (GZ) occurs at 15° and 0.055 metre-radians up to an angle of 30° when the maximum righting lever (GZ) occurs at 30° or above. Where the maximum righting lever (GZ) occurs at angles of between 15° and 30°, the corresponding area under the righting lever curve should be:

$$0.055 + 0.001 (30^\circ - \phi_{\max}) \text{ metre-radians,}$$

where  $\phi_{\max}$  is the angle of heel in degrees at which

the righting lever curve reaches its maximum.

- b. the area under the righting lever curve (GZ curve) between the angles of heel of 30° and 40°, or between 30° and  $\phi_f$  if this angle is less than 40°, should be not less than 0.03 metre-radians;
- c. the righting lever (GZ) should be at least 0.2 m at an angle of heel equal to or greater than 30°;
- d. the maximum righting lever (GZ) should occur at an angle of heel not less than 15°;

e. the initial transverse metacentric height ( $GM_o$ ) should not be less than 0.15 m.

**900. Intact stability for ships with additional class notation "petroleum products"**

901. Depending on the internal subdivision, some vessels may be subject to point of equilibrium (lolling) during liquid transfer operations such as loading, unloading and ballast.

902. To avoid the effect of point of equilibrium along the transference of liquid, during such operations simple operating procedures are to be followed.

903. By "simple operating procedures", it is meant written procedures available to the Commander of the ship, as follows:

- a. procedures approved by RBNA;
- b. indicate the ballast and cargo tanks which may remain empty under any load conditions and within a range of densities and yet able to meet the criteria for stability;
- c. readily understandable to the officer in charge of transfer operations;
- d. provide planned sequences of transferring cargo / ballast;
- e. allow comparisons of attained and required stability using tables or graphs;
- f. do not require extensive mathematical calculations by the officer;
- g. provide corrective actions to be taken by the officer in case of deviation from the recommended values and in emergency situations;
- h. be included in the Trim and Stability Booklets and ballast/cargo control station, as well as any computer program through which stability calculations are performed.

**H6. DAMAGE STABILITY**

**100. Damage stability for all ships where additional class notation "EAV" is required**

101. Every new decked offshore supply vessel of 24 m and over but not more than 100 m in length should comply with the provisions of Subchapter H6 of these Guidelines. The damage stability of a vessel of more than 100 m in length should be to the satisfaction of the Administration.

- a. Relaxations from the requirements of this Title 47 may be permitted by an RBNA for vessels engaged in near-coastal voyages off its own coasts provided the operating conditions are, in the opinion of RBNA,

such as to render compliance with the Guidelines unreasonable or unnecessary.

- b. Taking into account the initial conditions before flooding, the standard loading conditions required by the relevant provisions of Part B of the IS Code and the damage assumption in item H6.102 below, the vessel is to comply with the damage stability criteria specified in this Subchapter H6.

102. Damage should be assumed to occur anywhere in the vessel's length between transverse watertight bulkheads. Extent of damage hypothesis: the extension to be assumed for the damage of supply ships as follows:

a. **longitudinal extension:**

a.1. for a vessel the keel of which is laid or which is at a similar stage of construction \* before 22 November 2012:

- i.  $3\text{ m} + 0,03 * L$  when  $L > 43\text{ m}$  and less than 80 m
- ii.  $0,1 * L$  when  $L \leq 43\text{ m}$

a.2. for a vessel the keel of which is laid or which is at a similar stage of construction on or after 2 November 2012:

- i.  $0,1 * L$  when  $L \leq 43\text{ m}$
- ii.  $3\text{ m} + 0,03 * L$  when  $L > 43\text{ m}$  and less than 80 m
- iii.  $1/3L^{2/3}$  when  $L > 80\text{ m}$  and less than 100 m

b. **transversal extension:**

b.1. for a vessel the keel of which is laid or which is at a similar stage of construction before 22 November 2012:

- i. 760 mm measured inboard from the side of the vessel perpendicularly to the centreline at the level of the summer load waterline

b.2. for a vessel the keel of which is laid or which is at a similar stage of construction on or after 22 November 2012:

- i. 760 mm when  $L < 80\text{ m}$
- ii.  $B/20\text{ m} (*)$  when  $80 \leq L \leq 100\text{ m}$

(\*) But not less than 760 mm

b.3. The transverse extent should be measured inboard from the side of the vessel

perpendicularly to the centreline at the level of the summer load waterline

- c. **vertical extent:** For a vessel the keel of which is laid or which is at a similar stage of construction

c.1 before 22 November 2012:

A transverse watertight bulkhead extending from the vessel's side to a distance inboard of 760 mm or more at the level of the summer load line joining longitudinal watertight bulkheads may be considered as a transverse watertight bulkhead for the purpose of the damage calculations.

c.2 on or after 22 November 2012:

For a vessel with length (L) less than 80 m, a transverse watertight bulkhead extending from the vessel's side to a distance inboard of 760 mm or more at the level of the summer load line joining longitudinal watertight bulkheads may be considered as a transverse watertight bulkhead for the purpose of the damage calculations.

For a vessel with length (L) from 80 m to 100 m, a transverse watertight bulkhead extending from the vessel's side to a distance inboard of B/20 or more (but not less than 760 mm) at the level of the summer load line joining longitudinal watertight bulkheads may be considered as a transverse watertight bulkhead for the purpose of the damage calculations.

### 103. Transverse bulkheads for flooding

- a. For vessels with length (L) less than 80 metres, a transverse bulkhead extending from the ship's side to a distance of 760 mm or more towards the centre line, at the level of the summer load line joining the longitudinal watertight bulkheads may be considered as a transverse watertight bulkhead for the calculation of damage.
- b. For a vessel with length (L) from 80 metres to 100 metres, a transverse watertight bulkhead extending from the vessel's side to a distance inboard of B/20 or more (but not less than 760 mm) at the level of the summer load line joining longitudinal watertight bulkheads may be considered as a transverse watertight bulkhead for the calculation of damage.

104. **Progressive flooding:** If pipes, ducts or tunnels are situated within the assumed extent of damage, arrangements should be made to ensure that the progressive flooding cannot thereby extend to compartments other than those assumed to be floodable for each case of damage.

105. **Minor damage:** If damage of a lesser extent than that specified in H6.102 results in a more severe condition, such lesser extent should be assumed.

106. Where a transverse watertight bulkhead is located within the transverse extent of assumed damage and is stepped in way of a double bottom or side tank by more than 3,05 metres, the double bottom or side tanks adjacent to the stepped portion of the transverse watertight bulkhead should be considered as flooded simultaneously.

107. If the distance between adjacent transverse watertight bulkheads or the distance between the transverse planes passing through the nearest stepped portions of the bulkheads is less than the longitudinal extent of damage, only one of these bulkheads should be regarded as effective.

### 108. Assumptions for calculating damage stability

- a. Compliance with 3.3 should be confirmed by calculations which take into consideration the design characteristics of the vessel, the arrangements, configuration and permeability of the damaged compartments and the distribution, specific gravities and the free surface effect of liquids.
- b. **Permeability:** The permeability of compartments assumed to be damaged shall be as follows:
- |                            |   |
|----------------------------|---|
| a. storerooms:             | 60%   |
| b. engine room:            | 85%;  |
| c. accommodation:          | 95%;  |
| d. intended for dry cargo: | 95 %  |
| e. void spaces:            | 95%   |
| f. intended for liquids:   | the permeability should be consistent with the amount of liquid carried, as shown in the loading conditions. The permeability of empty tanks should be assumed to be not less than 95%. |

c. The free surface effect should be calculated at an angle of heel of 5° for each individual compartment, or the effect of free liquid in a tank should be calculated over the range of positive residual righting arm, by assessing the shift of liquids by moment of transference calculations.

d. Free surface for each type of consumable liquid should be assumed for at least one transverse pair of tanks or a single centreline tank. The tank or tanks to be taken into account should be those where the effect of free surface is the greatest.

e. Alternatively, the actual free surface effect may be used provided the methods of calculation are acceptable to the Administration.

## 200. Survival requirements

201. Vessels subject to these Rules are to be able to survive to the damages specified in H6.102 in a state of stable point of equilibrium and are to meet the criteria in H6.300 below.

## 300. Damage stability criteria

301. The final waterline, taking into account sinkage, heel and trim, should be below the lower edge of any opening through which progressive flooding may take place. Such openings should include air pipes and those which are capable of being closed by means of weather tight doors or hatch covers and may exclude those openings closed by means of watertight manhole covers and flush scuttles, small watertight cargo tank hatch covers which maintain the high integrity of the deck, remotely operated watertight sliding doors and side scuttles of the non-opening type.

302. In the final stage of flooding, the angle of heel due to unsymmetrical flooding should not exceed 15°. This angle may be increased up to 17° if no deck immersion occurs.

303. The stability in the final stage of flooding should be investigated and may be regarded as sufficient if the righting lever curve has, at least, a range of 20° beyond the position of equilibrium in association with a maximum residual righting lever of at least 100 mm within this range. Unprotected openings should not become immersed at an angle of heel within the prescribed minimum range of residual stability unless the space in question has been included as a floodable space in calculations for damage stability. Within this range, immersion of any of the openings referred to in H6.301 and any other openings capable of being closed weather tight may be authorized.

304. The stability is sufficient during intermediate stages of flooding.

305. Damage stability for ships with additional class notation "Chemicals" and additional class notation EAV (damage stability)

## CHAPTER J SPECIAL REQUIREMENTS FOR STANDBY SUPPLY VESSELS

### CHAPTER CONTENTS

#### J1. SPECIAL REQUIREMENTS FOR STANDBY SUPPLY VESSELS

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#### J1. SPECIAL REQUIREMENTS FOR STANDBY SUPPLY VESSELS

##### 100. Documentation

101. The following plans are to be submitted for approval in addition to those of Part II, Title 47, Section 1, Chapter B:

- a. Rescue area arrangement;
- b. Safety Plan including rescue and safety equipment;
- c. Spaces for survivors;
- d. Quantity of survivors the vessel is intended to carry shall be clearly indicated in the relevant documents and plans.

##### 200. Rescue Arrangement

201. The vessel's arrangement shall provide for a rescue zone at PS and SB, with minimum 8 meters length, properly marked on the ship's side, sufficiently far away from the propellers and clear of ship's discharges, and free from obstructions such as fenders.

202. Access routes from the rescue zones to the survivors' quarters and helicopter winch zone are to be provided with anti-slip coating.

203. Satisfactory lighting shall be provided along the rescue zone.

204. Bulwarks at the rescue zone shall be of the removable type, easily removed.

205. The navigation light is to be provided with two searchlights with a range of at least 250 meters, illuminating an area of not less than 10 meters diameter.

206. Each rescue zone is to be fitted with adequate equipment such as nets and hoisting devices capable of hoisting injured people on board. A decontamination area equipped with a shower is to be provided.

##### 300. Rescue boat

301. The vessel is to be equipped with a rescue boat in compliance with IMO MSC/Circ. 809, arranged and maintained so as to be permanently ready for use, even in rough weather, with launching arrangements as per SOLAS.

#### **400. Treatment room**

401. The vessel's arrangement shall provide for a treatment room for casualties, a recovery room with berths and fitted with medical stores arranged as per Local Regulations or International Standards. Blankets are to be provided in sufficient quantity for the number of survivors the vessel is intended to carry.

402. Corridors and doors giving access to the treatment room shall be of sufficient dimensions as to allow the passage of an injured person on a stretcher.

#### **500. Accommodation of the survivors**

501. There shall be an enclosed space adjacent to the treatment room for the accommodation of survivors. However, survivors may be accommodated in crew's spaces, excluding areas such as sanitary compartments, radio room, navigation bridge, etc.

502. At least one installation comprising a toilet, a wash basin and shower is to be provided exclusively for each group of 50 survivors.

#### **600. Minimum safety equipment required**

601. Minimum safety equipment shall be provided when the vessel has a gross tonnage less than 500:

- a. one line-throwing appliance with not less than four projectiles and four lines
- b. one daylight signalling lamp
- c. six lifebuoys, 4 being with a self-igniting light and buoyant line (SOLAS approved type)
- d. one SOLAS type approved immersion suit for each crew member
- e. one SOLAS type approved lifejacket for each crew member plus 25% of the number of survivors for which the vessel is intended to carry.

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