



RULES FOR THE CLASSIFICATION OF FAST PATROL VESSELS

Effective from 1 January 2016

Part E

Service Notations

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GENERAL CONDITIONS

Definitions:

"Administration" means the Government of the State whose flag the Ship is entitled to fly or under whose authority the Ship is authorized to operate in the specific case.

"IACS" means the International Association of Classification Societies.

"Interested Party" means the party, other than the Society, having an interest in or responsibility for the Ship, product, plant or system subject to classification or certification (such as the owner of the Ship and his representatives, the ship builder, the engine builder or the supplier of parts to be tested) who requests the Services or on whose behalf the Services are requested.

"Owner" means the registered owner, the ship owner, the manager or any other party with the responsibility, legally or contractually, to keep the ship seaworthy or in service, having particular regard to the provisions relating to the maintenance of class laid down in Part A, Chapter 2 of the Rules for the Classification of Ships or in the corresponding rules indicated in the specific Rules.

"Rules" in these General Conditions means the documents below issued by the Society:

- (i) Rules for the Classification of Ships or other special units;
- (ii) Complementary Rules containing the requirements for product, plant, system and other certification or containing the requirements for the assignment of additional class notations;
- (iii) Rules for the application of statutory rules, containing the rules to perform the duties delegated by Administrations;
- (iv) Guides to carry out particular activities connected with Services;
- (v) Any other technical document, as for example rule variations or interpretations.

"Services" means the activities described in Article 1 below, rendered by the Society upon request made by or on behalf of the Interested Party.

"Ship" means ships, boats, craft and other special units, as for example offshore structures, floating units and underwater craft.

"Society" or "TASNEEF" means Tasneef and/or all the companies in the Tasneef Group which provide the Services.

"Surveyor" means technical staff acting on behalf of the Society in performing the Services.

Article 1

- 1.1. The purpose of the Society is, among others, the classification and certification of ships and the certification of their parts and components. In particular, the Society:
 - (i) sets forth and develops Rules;
 - (ii) publishes the Register of Ships;
 - (iii) issues certificates, statements and reports based on its survey activities.
- 1.2. The Society also takes part in the implementation of national and international rules and standards as delegated by various Governments.
- 1.3. The Society carries out technical assistance activities on request and provides special services outside the scope of classification, which are regulated by these general conditions, unless expressly excluded in the particular contract.

Article 2

- 2.1. The Rules developed by the Society reflect the level of its technical knowledge at the time they are published. Therefore, the Society, although committed also through its research and development services to continuous updating of the Rules, does not guarantee the Rules meet state-of-the-art science and technology at the time of publication or that they meet the Society's or others' subsequent technical developments.
- 2.2. The Interested Party is required to know the Rules on the basis of which the Services are provided. With particular reference to Classification Services, special attention is to be given to the Rules concerning class suspension, withdrawal and reinstatement. In case of doubt or inaccuracy, the Interested Party is to promptly contact the Society for clarification. The Rules for Classification of Ships are published on the Society's website: www.tasneef.ae.
- 2.3. The Society exercises due care and skill:
 - (i) in the selection of its Surveyors
 - (ii) in the performance of its Services, taking into account the level of its technical knowledge at the time the Services are performed.
- 2.4. Surveys conducted by the Society include, but are not limited to, visual inspection and non-destructive testing. Unless otherwise required, surveys are conducted through sampling techniques and do not consist of comprehensive verification or monitoring of the Ship or of the items subject to certification. The surveys and checks made by the Society on board ship do not necessarily require the constant and continuous presence of the Surveyor. The Society may also commission laboratory testing, underwater inspection and other checks carried out by and under the responsibility of qualified service suppliers. Survey practices and procedures are selected by the Society based on its experience and knowledge and according to generally accepted technical standards in the sector.

Article 3

- 3.1. The class assigned to a Ship, like the reports, statements, certificates or any other document or information issued by the Society, reflects the opinion of the Society concerning compliance, at the time the Service is provided, of the Ship or product subject to certification, with the applicable Rules (given the intended use and within the relevant time frame). The Society is under no obligation to make statements or provide information about elements or facts which are not part of the specific scope of the Service requested by the Interested Party or on its behalf.
- 3.2. No report, statement, notation on a plan, review, Certificate of Classification, document or information issued or given as part of the Services provided by the Society shall have any legal effect or implication other than a representation that, on the basis of the checks made by the Society, the Ship, structure, materials, equipment, machinery or any other item covered by such document or information meet the Rules. Any such document is issued solely for the use of the Society, its committees and clients or other duly authorised bodies and for no other purpose. Therefore, the Society cannot be held liable for any act made or document issued by other parties on the basis of the statements or information given by the Society. The validity, application, meaning and interpretation of a Certificate of Classification, or any other document or information issued by the Society in connection with its Services, is governed by the Rules of the Society, which is the sole subject entitled to make such interpretation. Any disagreement on technical matters between the Interested Party and the Surveyor in the carrying out of his functions shall be raised in writing as soon as possible with the Society, which will settle any divergence of opinion or dispute.
- 3.3. The classification of a Ship, or the issuance of a certificate or other document connected with classification or certificate on and in general with the performance of Services by the Society shall have the validity conferred upon it by the Rules of the Society at the time of the assignment of class or issuance of the certificate; in no case shall it amount to a statement or warranty of seaworthiness,

structural integrity, quality or fitness for a particular purpose or service of any Ship, structure, material, equipment or machinery inspected or tested by the Society.

- 3.4. Any document issued by the Society in relation to its activities reflects the condition of the Ship or the subject of certification or other activity at the time of the check.
- 3.5. The Rules, surveys and activities performed by the Society, reports, certificates and other documents issued by the Society are in no way intended to replace the duties and responsibilities of other parties such as Governments, designers, ship builders, manufacturers, repairers, suppliers, contractors or sub-contractors, Owners, operators, charterers, underwriters, sellers or intended buyers of a Ship or other product or system surveyed.

These documents and activities do not relieve such parties from any fulfilment, warranty, responsibility, duty or obligation (also of a contractual nature) expressed or implied or in any case incumbent on them, nor do they confer on such parties any right, claim or cause of action against the Society. With particular regard to the duties of the ship Owner, the Services undertaken by the Society do not relieve the Owner of his duty to ensure proper maintenance of the Ship and ensure seaworthiness at all times. Likewise, the Rules, surveys performed, reports, certificates and other documents issued by the Society are intended neither to guarantee the buyers of the Ship, its components or any other surveyed or certified item, nor to relieve the seller of the duties arising out of the law or the contract, regarding the quality, commercial value or characteristics of the item which is the subject of transaction.

In no case, therefore, shall the Society assume the obligations incumbent upon the above-mentioned parties, even when it is consulted in connection with matters not covered by its Rules or other documents.

In consideration of the above, the Interested Party undertakes to relieve and hold harmless the Society from any third party claim, as well as from any liability in relation to the latter concerning the Services rendered.

Insofar as they are not expressly provided for in these General Conditions, the duties and responsibilities of the Owner and Interested Parties with respect to the services rendered by the Society are described in the Rules applicable to the specific Service rendered.

Article 4

- 4.1. Any request for the Society's Services shall be submitted in writing and signed by or on behalf of the Interested Party. Such a request will be considered irrevocable as soon as received by the Society and shall entail acceptance by the applicant of all relevant requirements of the Rules, including these General Conditions. Upon acceptance of the written request by the Society, a contract between the Society and the Interested Party is entered into, which is regulated by the present General Conditions.

- 4.2. In consideration of the Services rendered by the Society, the Interested Party and the person requesting the service shall be jointly liable for the payment of the relevant fees, even if the service is not concluded for any cause not pertaining to the Society. In the latter case, the Society shall not be held liable for non-fulfilment or partial fulfilment of the Services requested. In the event of late payment, interest at the legal current rate increased by 1.5% may be demanded.

- 4.3. The contract for the classification of a Ship or for other Services may be terminated and any certificates revoked at the request of one of the parties, subject to at least 30 days' notice to be given in writing. Failure to pay, even in part, the fees due for Services carried out by the Society will entitle the Society to immediately terminate the contract and suspend the Services.

For every termination of the contract, the fees for the activities performed until the time of the termination shall be owed to the Society as well as the expenses incurred in view of activities already programmed; this is without prejudice to the right to compensation due to the Society as a consequence of the termination.

With particular reference to Ship classification and certification, unless decided otherwise by the Society, termination of the contract implies that the assignment of class to a Ship is withheld or, if already assigned, that it is suspended or withdrawn; any statutory certificates issued by the Society will be withdrawn in those cases where provided for by agreements between the Society and the flag State.

Article 5

- 5.1. In providing the Services, as well as other correlated information or advice, the Society, its Surveyors, servants or agents operate with due diligence for the proper execution of the activity. However, considering the nature of the activities performed (see art. 2.4), it is not possible to guarantee absolute accuracy, correctness and completeness of any information or advice supplied. Express and implied warranties are specifically disclaimed.

Therefore, except as provided for in paragraph 5.2 below, and also in the case of activities carried out by delegation of Governments, neither the Society nor any of its Surveyors will be liable for any loss, damage or expense of whatever nature sustained by any person, in tort or in contract, derived from carrying out the Services.

- 5.2. Notwithstanding the provisions in paragraph 5.1 above, should any user of the Society's Services prove that he has suffered a loss or damage due to any negligent act or omission of the Society, its Surveyors, servants or agents, then the Society will pay compensation to such person for his proved loss, up to, but not exceeding, five times the amount of the fees charged for the specific services, information or opinions from which the loss or damage derives or, if no fee has been charged, a maximum of AED5,000 (Arab Emirates Dirhams Five Thousand only). Where the fees charged are related to a number of Services, the amount of the fees will be apportioned for the purpose of the calculation of the maximum compensation, by reference to the estimated time involved in the performance of the Service from which the damage or loss derives. Any liability for indirect or consequential loss, damage or expense is specifically excluded. In any case, irrespective of the amount of the fees charged, the maximum damages payable by the Society will not be more than AED5,000,000 (Arab Emirates Dirhams Five Millions only). Payment of compensation under this paragraph will not entail any admission of responsibility and/or liability by the Society and will be made without prejudice to the disclaimer clause contained in paragraph 5.1 above.

- 5.3. Any claim for loss or damage of whatever nature by virtue of the provisions set forth herein shall be made to the Society in writing, within the shorter of the following periods: (i) THREE (3) MONTHS from the date on which the Services were performed, or (ii) THREE (3) MONTHS from the date on which the damage was discovered. Failure to comply with the above deadline will constitute an absolute bar to the pursuit of such a claim against the Society.

Article 6

- 6.1. These General Conditions shall be governed by and construed in accordance with United Arab Emirates (UAE) law, and any dispute arising from or in connection with the Rules or with the Services of the Society, including any issues concerning responsibility, liability or limitations of liability of the Society, shall be determined in accordance with UAE law. The courts of the Dubai International Financial Centre (DIFC) shall have exclusive jurisdiction in relation to any claim or dispute which may arise out of or in connection with the Rules or with the Services of the Society.

- 6.2. However,

- (i) In cases where neither the claim nor any counterclaim exceeds the sum of AED300,000 (Arab Emirates Dirhams Three Hundred Thousand) the dispute shall be referred to the jurisdiction of the DIFC Small Claims Tribunal; and
- (ii) for disputes concerning non-payment of the fees and/or expenses due to the Society for services, the Society shall have the

right to submit any claim to the jurisdiction of the Courts of the place where the registered or operating office of the Interested Party or of the applicant who requested the Service is located.

In the case of actions taken against the Society by a third party before a public Court, the Society shall also have the right to summon the Interested Party or the subject who requested the Service before that Court, in order to be relieved and held harmless according to art. 3.5 above.

Article 7

- 7.1.** All plans, specifications, documents and information provided by, issued by, or made known to the Society, in connection with the performance of its Services, will be treated as confidential and will not be made available to any other party other than the Owner without authorization of the Interested Party, except as provided for or required by any applicable international, European or domestic legislation, Charter or other IACS resolutions, or order from a competent authority. Information about the status and validity of class and statutory certificates, including transfers, changes, suspensions, withdrawals of class, recommendations/conditions of class, operating conditions or restrictions issued against classed ships and other related information, as may be required, may be published on the website or released by other means, without the prior consent of the Interested Party. Information about the status and validity of other certificates and statements may also be published on the website or released by other means, without the prior consent of the Interested Party.
- 7.2.** Notwithstanding the general duty of confidentiality owed by the Society to its clients in clause 7.1 above, the Society's clients hereby accept that the Society may participate in the IACS Early Warning System which requires each Classification Society to provide other involved Classification Societies with relevant technical information on serious hull structural and engineering systems failures, as defined in the IACS Early Warning System (but not including any drawings relating to the ship which may be the specific property of another party), to enable such useful information to be shared and used to facilitate the proper working of the IACS Early Warning System. The Society will provide its clients with written details of such information sent to the involved Classification Societies.
- 7.3.** In the event of transfer of class, addition of a second class or withdrawal from a double/dual class, the Interested Party undertakes to provide or to permit the Society to provide the other Classification Society with all building plans and drawings, certificates, documents and information relevant to the classed unit, including its history file, as the other Classification Society may require for the purpose of classification in compliance with the applicable legislation and relative IACS Procedure. It is the Owner's duty to ensure that, whenever required, the consent of the builder is obtained with regard to the provision of plans and drawings to the new Society, either by way of appropriate stipulation in the building contract or by other agreement.
- In the event that the ownership of the ship, product or system subject to certification is transferred to a new subject, the latter shall have the right to access all pertinent drawings, specifications, documents or information issued by the Society or which has come to the knowledge of the Society while carrying out its Services, even if related to a period prior to transfer of ownership.

Article 8

- 8.1.** Should any part of these General Conditions be declared invalid, this will not affect the validity of the remaining provisions.

EXPLANATORY NOTE TO PART E

1. Reference edition

The reference edition for Part E is this edition effective from 1 January 2016.

2. New editions after the reference edition

Except in particular cases, a new edition of the Rules is published annually.

3. Effective date of the requirements

3.1 All requirements in which new or amended provisions with respect to those contained in the reference edition have been introduced are followed by a date shown in brackets.

3.2 The date shown in brackets is the effective date of entry into force of the requirements as amended by the last updating. The effective date of all those requirements not followed by any date shown in brackets is that of the reference edition.

4. Rule Variations and Corrigenda

Until the next edition of the Rules is published, Rule Variations and/or corrigenda, as necessary, will be published on the TASNEEF web site (www.tasneef.ae). Except in particular cases, paper copies of Rule Variations or corrigenda are not issued.

5. Rule subdivision and cross-references

5.1 Rule subdivision

The Rules are subdivided into six parts, from A to F.

Part A: Classification and Surveys

Part B: Hull and Stability

Part C: Machinery, Systems and Fire Protection

Part D: Materials and Welding

Part E: Service Notations

Part F: Additional Class Notations

Each Part consists of:

- Chapters
- Sections and possible Appendices
- Articles
- Sub-articles
- Requirements

Figures (abbr. Fig) and Tables (abbr. Tab) are numbered in ascending order within each Section or Appendix.

5.2 Cross-references

Examples: Pt A, Ch 1, Sec 1, [3.2.1] or Pt A, Ch 1, App 1, [3.2.1]

- Pt A means Part A

The part is indicated when it is different from the part in which the cross-reference appears. Otherwise, it is not indicated.

- Ch 1 means Chapter 1

The Chapter is indicated when it is different from the chapter in which the cross-reference appears. Otherwise, it is not indicated.

- Sec 1 means Section 1 (or App 1 means Appendix 1)

The Section (or Appendix) is indicated when it is different from the Section (or Appendix) in which the cross-reference appears. Otherwise, it is not indicated.

- [3.2.1] refers to requirement 1, within sub-article 2 of article 3.

Cross-references to an entire Part or Chapter are not abbreviated as indicated in the following examples:

- Part A for a cross-reference to Part A
- Part A, Chapter 1 for a cross-reference to Chapter 1 of Part A.

6. Summary of amendments introduced in the edition effective from 1st January 2016.

This edition of the Rules for the classification of Fast Patrol Vessels is considered as a reference edition for future amendments.

RULES FOR THE CLASSIFICATION OF FAST PATROL VESSELS

Part E Service Notations

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CHAPTER 1

RESCUE VESSELS

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Part E
Service Notations

Chapter 1
RESCUE VESSELS

SECTION 1 GENERAL

SECTION 2 STABILITY

SECTION 3 GENERAL ARRANGEMENTS

SECTION 1 GENERAL

1 Application

1.1.1 The service notation **rescue**, as defined in Part A, Ch 1, Sec 4, [4.1.5], may be assigned to vessels complying with the requirements of this Chapter.

1.1.2 Vessels dealt with in this Chapter are to comply with the requirements stipulated in Parts A, B, C and D, as applicable, as well as with the additional requirements of this Chapter, which are specific to rescue vessels.

2 Documents to be submitted

2.1.1 Plans or documents to be submitted to Tasneef are listed in Tab 1.

Table 1 : Documents to be submitted

No.	A/I (1)	Document
1	A	General arrangement where internal and external areas intended for recovery of shipwrecked persons are indicated
2	I	List of the rescue equipment
3	A	Stability checks for the loading conditions required by this Chapter
(1) A: to be submitted for approval in four copies I: to be submitted for information in duplicate		

SECTION 2 STABILITY

1 General

1.1 Number of rescuable persons

1.1.1 For the checks in the subsequent articles the following number of rescuable persons, N_R , is to be considered:

$$N_R = 1,3 \cdot A_C + N_0$$

where:

A_C = free deck area in m^2 as defined in [1.1.4]

N_0 = number of persons recoverable in internal spaces intended for the shipwrecked persons (crew accommodation, mess rooms, etc.)

note: N_R is to be rounded up to the closer integer

1.1.2 Upon specific request of the Administration, a maximum number of rescuable persons different from the figure obtained by the formula given in [2.1.1] may be accepted; in such a case the service notation rescue may be completed by the additional service feature **max N**, where N means the maximum number of rescuable persons.

1.1.3 For the checks in the subsequent articles a weight of 75 kg per person is to be assumed.

Where more detailed information is not available on the accessory equipment (water, food rations, blankets, medicines, etc.) required in the subsequent articles for the assignment of the service notation rescue, the weight of this equipment to be added to the vessel's weight may be considered as $5 N_R$, in kg.

1.1.4 Free deck area

For the checks mentioned above, the value of the free deck area A_C is to be considered as the sum of the external plane areas, except for the upper surfaces of deckhouses and superstructures.

Furthermore, the value of A_C is not to include all the spaces necessary for the usual operation of the vessel, such as:

- corridors for safe routes from stern to bow,
- mooring areas,
- areas necessary for use of appliances such as monitors, cranes, etc.

Those areas are to be indicated in the general arrangement of the spaces intended for the recovery of shipwrecked persons, which is to be submitted for approval as per Sec 1, Tab 1 of this Chapter.

2 Stability

2.1 Stability booklet

2.1.1 The stability checks as per Part B, Ch 3, Sec 2 are also to be carried out for the following loading conditions:

- Full load displacement with N_R shipwrecked persons and accessory equipment on board;
- Minimum operating load displacement with N_R shipwrecked persons and accessory equipment on board.

2.1.2 In agreement with the Administration, in order to evaluate a heeling due to a turning, where required by Part B, Ch 3, Sec 2, a service speed of the vessel lower than the maximum design speed may be considered. The value of speed to be used for this check is to be agreed with Tasneef.

2.2 Crowding to side

2.2.1 The heeling angle following crowding of the shipwrecked persons to vessel's side is not to exceed 10° and in any case the bulkhead deck is not to be submerged. For vessels having length less than 24 m, the heeling angle is not to exceed the angle corresponding to a freeboard of 0,1 m before the deck is submerged or 15° , if less.

2.2.2 For the checks in the foregoing item [2.2.1] the number of persons to be considered is $N_R - N_0$, assuming that the shipwrecked persons, if any, that are accommodated in the internal spaces do not contribute to crowding to side.

2.2.3 The moment due to crowding of the shipwrecked persons is to be calculated taking account of the following assumptions:

- four persons per square metre of external free deck area of the external decks except for the upper surfaces of deckhouses and superstructures;
- a mass of 75 kg for each shipwrecked person;
- the shipwrecked persons are to be distributed over the deck areas as previously defined toward one side of the vessel, and in such a way so as to cause the most unfavourable heeling moment;
- the height of the centre of gravity for each person is to be considered at 1,0 m above the deck level in upright position (if necessary, the camber and sheer of the deck may be accounted for).

SECTION 3

GENERAL ARRANGEMENTS

1 General

1.1.1 Arrangements and equipment

Vessels having the service notation rescue are to be fitted with at least the following arrangements and equipment:

- a) a "RESCUE ZONE" area on each side of the vessel's main deck where the relevant bulwark is lower than in the other part of the vessel or provided with a gate or chain in order to facilitate the embarkation of the shipwrecked persons;
- b) a search light installed in such a way as to illuminate the fore area and both sides of the vessel; where this arrangement cannot be provided, a search light on each side of the vessel is to be installed;
- c) nets or other equipment to facilitate the recovery of shipwrecked persons from the sea;
- d) blankets (at least one for each person forming the maximum capacity of shipwrecked persons for which the vessel is designed);
- e) facilities and provisions for shipwrecked persons in addition to those necessary for the normal

complement of crew (food and water rations for at least 150% of the maximum capacity of shipwrecked persons for which the vessel is designed to accommodate);

- f) first aid kits and medicines (for at least 100% of the maximum capacity of shipwrecked persons for which the vessel is designed to accommodate).

1.1.2 Watching of exposed decks

For vessels having a length $L > 24$ m, the exposed decks where the shipwrecked persons are accommodated are to be visually watched from the bridge or other conning position of the vessel.

Where the window arrangement of the conning position does not permit the direct visual watching of the exposed decks intended for the accommodation of the shipwrecked persons, those areas are to be watched by means of a system of video-cameras and video-displays.

Part E
Service Notations

Chapter 2
FIRE FIGHTING VESSELS

- SECTION 1 GENERAL**
- SECTION 2 STABILITY**
- SECTION 3 MACHINERY AND SYSTEMS**
- SECTION 4 FIRE PROTECTION AND EXTINCTION**

SECTION 1 GENERAL

1 Application

1.1.1 The service notation **fire fighting**, as defined in Part A, Ch 1, Sec 4, [4.1.5], may be assigned to vessels complying with the requirements of this Chapter.

1.1.2 Vessels dealt with in this Chapter are to comply with the requirements stipulated in Parts A, B, C and D, as applicable, as well as with the requirements of this Chapter, which are specific to vessels intended for fire-fighting.

2 Documents to be submitted

2.1.1 Plans or documents to be submitted to Tasneef are listed in Tab 1.

Table 1 : Documents to be submitted

No.	A/I (1)	Document (2)
1	I	General arrangement showing the disposition of all fire-fighting equipment
2	A/I	Details of all fire-fighting equipment such as pumps and monitors, including their capacity, range and trajectory of delivery
3	A	Schematic diagram of the water fire-fighting system
4	I	Plan of the water monitor seating arrangements
5	A/I	Diagram of local and remote control system for water monitors
6	A	Schematic diagram of the fixed self-protection water-spraying system
<p>(1) A: to be submitted for approval in four copies I: to be submitted for information in duplicate</p> <p>(2) Diagrams are also to include, where applicable:</p> <ul style="list-style-type: none"> • the (local and remote) control and monitoring systems and automation systems • the instructions for the operation and maintenance of the piping system concerned (for information) 		

SECTION 2

STABILITY

1 Stability

1.1.1 Additional stability criteria

All the loading conditions reported in the trim and stability booklet, with the exception of lightship, are also to be checked in order to investigate the vessel's capability to support the effect of the reaction force of the water jet in the beam direction due to the monitors fitted on board.

A fire-fighting vessel may be considered as having sufficient stability, according to the effect of the reaction force of the water jet in the beam direction due to the monitors fitted on board, if the heeling angle of static equilibrium θ_0 , corresponding to the first intersection between heeling and righting arms (see Fig 1), is less than 5° .

The heeling arm may be calculated using the following formula:

$$b_h = \frac{\sum R_i \cdot h_i + S \cdot (T/2 - e)}{9,81 \cdot \Delta} \cdot \cos\theta$$

where:

b_h : Heeling arm, in m, relevant to the reaction force of the water jet in the beam direction due to the monitors fitted on board, and to the effect of transversal manoeuvring thrusters. The monitors are assumed to be oriented in beam direction parallel to the sea surface, so as to consider the most severe situation.

R_i : Reaction force, in kN, of the water jet in the beam direction due to each monitor fitted on board (see Fig 2).

h_i : Vertical distance, in m, between the location of each monitor and half draught (see Fig 2).

S : Thrust, in kN, relevant to manoeuvring thruster(s), if applicable (see Fig 2).

e : Vertical distance, in m, between the manoeuvring thruster axis and keel (see Fig 2).

Δ : Displacement, in t, relevant to the loading condition under consideration.

T : Draught, in m, corresponding to Δ (see Fig 2).

Figure 1 : Heeling and righting arm curves

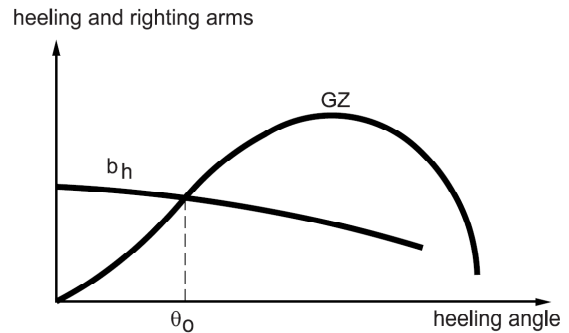
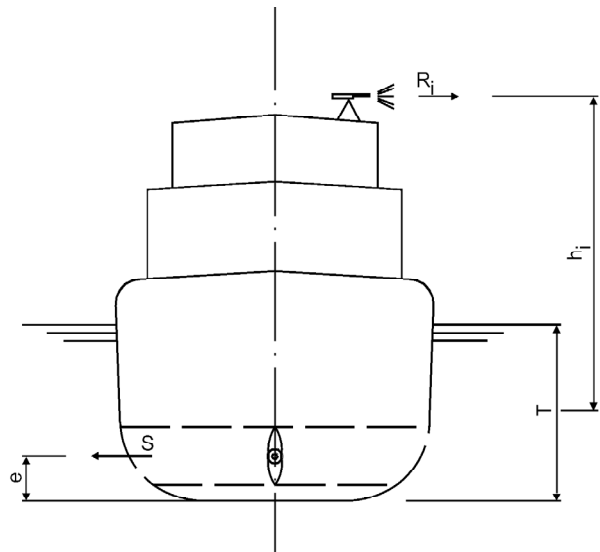


Figure 2 : Reaction force of water jet in the beam direction due to monitors



SECTION 3

MACHINERY AND SYSTEMS

1 Design of machinery systems

1.1 Manoeuvrability

1.1.1 General

- a) The ratios between the main vessel dimensions and the power of propulsion engines and of engines driving side thrusters are to be adequate and such as to ensure an effective manoeuvrability during fire-fighting operations.
- b) The side thrusters and the main propulsion system are to be capable of maintaining the vessel in the wanted position in still water and of withstanding the reaction forces of the water monitors even in the most unfavourable combination of operating conditions of such monitors, without requiring more than 80% of the above propulsive power, to prevent engine overload.
- c) For vessels having a length $L < 24$ m and not fitted with side thrusters, the verification as per the forgoing item b) may only be carried out with the water monitors in the forward direction.

1.1.2 Power control system

An operating control system of the power supplied by the engines is to be provided, including:

- an alarm device operating at 80% of the maximum propulsive power available in free navigation, and
- an automatic device reducing the power on reaching 100% of the above propulsive power, to prevent engine overload.

Note 1: Such operating control system may not be required, at the discretion of Tasneef, in cases where the installed power is redundant.

2 General requirements for fire fighting systems

2.1 General

2.1.1 The requirements of this Article apply to both water fire-extinguishing systems and fixed foam fire-extinguishing systems.

2.2 Independence of pumping and piping systems

2.2.1 The piping system serving the water and foam monitors are not to be used for other services except for the self-protection water-spraying system and emergency bilge system to strip rescued vessels.

2.2.2 Where the water monitor pumps are also used for the self-protection water-spraying system or the emergency bilge system to strip rescued vessels, it is to be possible to segregate the systems by means of a valve.

2.3 Design and construction of piping systems

2.3.1 General

- a) Fire-fighting piping systems are to comply with the provisions of Part C, Ch 1, Sec 9.
- b) The maximum design water velocity is not normally to exceed 2 m/s in the suction line.

2.3.2 Sea suction

- a) Sea suction for fire-fighting pumps are not to be used for other purposes.
- b) Sea suction and associated sea chests are to be so arranged as to ensure a continuous and sufficient water supply to the fire-fighting pumps and not adversely affected by the vessel motion or by water flow to or from bow thrusters, side thrusters, azimuth thrusters or main propellers.
- c) Sea suction are to be located as low as practicable to avoid oil intake from the surface of the sea.
- d) For vessels having a length $L > 24$ m, sea water inlets are to be fitted with strainers having a free passage area of at least twice that of the sea suction valve. Efficient means are to be provided for clearing the strainers.

2.3.3 Pumps

- a) Means are to be provided to avoid overheating of the fire-fighting pumps when they operate at low delivery rates.
- b) For vessels having a length $L > 24$ m, the starting of fire-fighting pumps when sea water inlet valves are closed is either to be prevented by an interlock system or to trigger an audible and visual alarm.

2.3.4 Valves

- a) Sea water suction valves and water delivery valves with a nominal diameter exceeding 450 mm are to be provided with a power actuation system as well as a manual operation device.
- b) For vessels having a length $L > 24$ m, sea water suction valves, water delivery valves and pump prime movers are to be operable from the same position.

2.3.5 Protection against corrosion

Means are to be provided to ensure adequate protection against:

- internal corrosion for all piping from sea water inlets to water monitors,
- external corrosion for the lengths of piping exposed to the weather.

2.4 Monitors

2.4.1 General

At least one sea water monitor complying with the requirements of this article is to be fitted.

The performance of the monitor (capacity, length and height of the jet) are to fulfil the specific requests of the Administration.

2.4.2 Design of monitors

- a) Monitors having a capacity greater than 100 m³/h are to be of a type approved by Tasneef.
- b) Monitors are to be of robust construction and capable of withstanding the reaction forces of the water jet.

2.4.3 Support of the monitors

The seating of the monitors are to be of adequate strength for all modes of operations.

2.4.4 Monitors are to be so arranged as to allow an easy horizontal movement of at least 90° equally divided about the centreline of the vessel.

2.4.5 The monitors are to be located such that the water jet is free from obstacles, including vessel's structure and equipment.

2.4.6 The monitors are to be capable of throwing a continuous full water jet without significant pulsations and compacted in such a way as to be concentrated on a limited surface.

2.4.7 Piping

The maximum design water velocity is not normally to exceed 4 m/s in the piping between pumps and water monitors.

2.5 Monitor control

2.5.1 General

Water monitors and foam monitors are to be operated and controlled with a remote control system located in a common control station having adequate overall visibility.

Manual control may only be accepted for monitors having a capacity less than 100 m³/h for which there is practical evidence that the jet can easily be controlled manually.

2.5.2 Manual control

- In addition to the remote control system, a local manual control is to be arranged for each monitor. It is to be possible to:
 - disconnect the local manual control from the control station,
 - disconnect the remote control system, from a position close to each monitor, to allow the operation with the local manual control.

2.5.3 Valve control

The valve control is to be designed so as to prevent pressure hammering.

2.6 Hydrants and fire hoses

2.6.1 Hydrants

- a) At least one hydrant on each side of the vessel on main deck is to be provided.
- b) Where hydrants are fed by the pumps serving the monitor supply lines, provision is to be made to reduce the water pressure at the hydrants to a value permitting safe handling of the hose and the nozzle by one man.
- c) Each hydrant is to be provided with a fire hose fire hoses complete with dual-purpose (spray/jet) nozzles.

2.6.2 Fire hoses

- a) Fire hoses and associated nozzles are to be of a type approved by Tasneef.
- b) Fire hoses are to be of 45 to 70 mm in diameter and generally are to be 20 m in length.

3 Tests

3.1 General

3.1.1 The provisions of this Article are related to the workshop and on board tests to be carried out for:

- machinery systems,
- fire-fighting systems.

They supplement those required in Part C, Chapter 1 for machinery systems.

3.2 Workshop tests

3.2.1 Tests for material

- a) Materials used for the housing of fire-fighting pumps are to be subjected to a tensile test at ambient temperature according to the relevant provisions of Part D. For pumps having a capacity less than 100 m³/h the internal manufacturer certification of the material may be accepted.

- b) Materials used for pipes, valves and other accessories are to be tested in accordance with the provisions of Part C, Ch 1, Sec 9.

3.2.2 Hydrostatic tests

After completion of manufacture and before installation on board, pipes, valves, accessories and pump housings are to be submitted to a hydrostatic test in accordance with the provisions of Part C, Ch 1, Sec 9.

3.3 On board tests

3.3.1 Fixed fire-fighting systems

After assembly on board, the water fire-fighting systems and the fixed foam fire-extinguishing systems are to be checked for leakage at normal operating pressure.

The water fire-fighting systems and fixed foam fire-extinguishing systems are to undergo an operational test on board the vessel, to check their characteristics and performances.

3.3.2 Propulsion and manoeuvring systems

- a) A test is to be performed to check the manoeuvring capability of the vessel.
- b) The capability of the main propulsion system and the side thrusters, if fitted, to maintain the vessel in position with all water monitors in service without requiring more than 80% of the propulsive power is to be demonstrated.

SECTION 4

FIRE PROTECTION AND EXTINCTION

1 Fire protection of exposed surfaces

1.1 Structural fire protection

1.1.1 On vessels having a length $L > 24$ m, all exterior boundaries above the lightest operating waterline, including superstructures and exposed decks, are to be of steel.

Those boundaries may be constructed of material other than steel where a self-protection complying with the requirements of [2] is installed.

2 Self-protection water-spraying system

2.1 General

2.1.1 Where a self-protection water-spraying system is fitted, it is to comply with the requirements given below.

2.1.2 Scuppers

When a vessel is fitted with a water-spraying system, suitable scuppers and/or freeing ports are to be provided to ensure efficient drainage of water accumulating on deck surfaces, when such system is in operation.

2.2 Capacity

2.2.1 The capacity of the self-protection water-spraying system is to be not less than 10 l/min for each square metre of protected area.

2.2.2 In the case of surfaces which are internally insulated, such as to constitute A-60 class divisions, a lower capacity may be accepted, provided it is not less than 5 l/min for each square metre of protected area.

2.3 Arrangement

2.3.1 Areas to be protected

The fixed self-protection water-spraying system is to provide protection for all vertical areas of the hull and superstructures as well as monitor foundations and other fire-fighting arrangements, and is to be fitted in such a way as not to impair the necessary visibility from the wheelhouse and from the station for remote control of water monitors, also during operation of spray nozzles.

2.3.2 Sections

The fixed self-protection water-spraying system may be divided into sections so that it is possible to isolate sections covering surfaces which are not exposed to radiant heat.

2.3.3 Spray nozzles

The number and location of spray nozzles are to be suitable to spread the sprayed water uniformly on areas to be protected.

2.4 Piping

2.4.1 Protection against corrosion

Steel pipes are to be protected against corrosion, both internally and externally, by means of galvanising or equivalent method.

2.4.2 Piping arrangement

The sections of the suction pipes are to be short and straight as far as practicable.

2.4.3 Drainage cocks

Suitable drainage cocks are to be arranged and precautions are to be taken in order to prevent clogging of spray nozzles by impurities contained in pipes, nozzles, valves and pumps.