



# **Rules for the Classification of Floating Docks**

*Effective from 1 July 2025*

**GENERAL TERMS AND CONDITIONS**  
**OF EMIRATES CLASSIFICATION SOCIETY – L.L.C – O.P.C (TASNEEF)**  
**EFFECTIVE AS OF 1 APRIL 2025**

**DEFINITIONS**

<b>Administration</b>	means the government of the state whose flag the Ship is entitled to fly or under whose authority the Ship is authorised to operate in the specific case.
<b>Client</b>	means the interested party and any other party who requires the Services.
<b>Certificate of Classification</b>	means a certificate of classification, issued by a Society and the certificate confirms that the vessel's structure, machinery, and equipment meet the society's specific technical rules and regulations.
<b>Interested Party</b>	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.
<b>Owner</b>	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.
<b>Register of Ships</b>	means a register book, also known as a Register of Ships, is a comprehensive record of vessels that are classified by a society.
<b>Rules</b>	means the documents below issued by the Society: <ul style="list-style-type: none"> <li>a. Rules for the classification of Ships or other special units.</li> <li>b. Complementary rules containing the requirements for certification of products, plants, systems and other or containing the requirements for the assignment of additional class notations.</li> <li>c. Rules for the application of statutory rules, containing the rules to perform the duties delegated by administrations.</li> <li>d. Guides to carry out particular activities connected with Services.</li> <li>e. Any other technical document, as for example rule variations or interpretations.</li> </ul>

<b>Services</b>	means the activities described in Article 1 below, rendered by the Society upon request made by or on behalf of the Interested Party.
<b>Ship</b>	means ships, boats, craft and other special units, as for example offshore structures, floating units and underwater craft.
<b>Society</b>	means Emirates Classification Society LLC OPC and/or its affiliated entities providing the Services.
<b>Surveyor</b>	means technical staff acting on behalf of the society in performing the Services.
<b>UAE</b>	means United Arab Emirates.

#### 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.
- 1.2 The Society (a) sets forth and develops Rules; (b) publishes the Register of Ships; and (c) issues certificates, statements and reports based on its survey activities.
- 1.3 The Society also takes part in the implementation of national and international rules and standards as delegated by various Governments.
- 1.4 The Society carries out technical assistance activities on request and provides special services outside the scope of classification, which is 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, though committed, also through its research and development services, to continuous updating, does not guarantee they 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.tasneefmaritime.ae](http://www.tasneefmaritime.ae)
- 2.3 The Society exercises due care and skill:
  - (a) in the selection of its Surveyors; and
  - (b) 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 each component of the Ship or of the items subject to certification. The surveys and checks made by the Society, either on board Ships or with remote techniques, do not necessarily require the constant and continuous presence of the Surveyor. The Society may also commission laboratory testing, underwater inspection and other checks to qualified service suppliers, who will carry out these duties under their responsibility. 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, reflect the discretionary 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).
- 3.2 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.
- 3.3 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, are governed by the Rules of the Society, whom is the sole subject entitled to make such authentic 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.
- 3.4 The classification of a Ship, or the issuance of a certificate or other document connected with classification or certification 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.
- 3.5 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.
- 3.6 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 including, without limitation, 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.

- 3.7 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 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.
- 3.8 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.
- 3.9 In consideration of the above, and within the limits of liability under Article 5 below, 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, where these are attributable to the Interested Party.
- 3.10 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 and costs, 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 non-payment of the invoice within the contractually agreed terms, the Society reserves the right to request, in addition to the full payment of the principal amount due and without the need for further formal notice, also:
- (a) Late payment interest at a rate of 5% per annum, calculated from the due date of the invoice until full payment is received, in accordance with the applicable laws in the United Arab Emirates or the country from where the invoice is issued. Any applicable VAT, taxes, or statutory levies shall be borne by the Client as per the laws

of the respective jurisdiction;

- (b) full reimbursement of any costs incurred for debt recovery, including, but not limited to, legal fees, administrative expenses, and the costs of any extrajudicial actions; and
- (c) any additional amount due as compensation for damages suffered as a result of the delay or non-compliance, where documented.

- 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.
- 4.4 The Society may withhold, suspend or withdraw any certificate, report or service in the event of non-payment of fees due to any member of the Society by the Client in relation to the entire business relationship between any member of the Society and the Client or by any other companies belonging to the same group as the Client. This also applies when the obligation to pay rests with a builder or with the Ship's previous Owner.
- 4.5 For every case of termination or suspension of the contract, the fees for the activities performed until the time of the termination or of the suspension 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 or of the suspension.
- 4.6 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 Article 2), it is not possible to guarantee absolute accuracy, correctness and completeness of any information or advice supplied. Express and implied warranties are specifically disclaimed.
- 5.2 Therefore, subject to what provided for in Article 5.3 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.
- 5.3 Notwithstanding the provisions in Article 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).
- 5.4 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 AED 300,000 (Three Hundred Thousand Dirhams). Payment of compensation under this Article 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 Article 5.

- 5.5 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: THREE MONTHS from the date on which the Services were performed or THREE 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 Any dispute, controversy, or claim arising out of or relating to these Rules, the Services of the Society, or the interpretation, breach, or termination thereof, shall first be referred to the parties' senior management for amicable resolution within thirty (30) days of written notice by either party.
- 6.2 If the dispute is not resolved amicably under Article 6.1, it shall be exclusively governed by and construed in accordance with the laws of the Emirate of Abu Dhabi and the applicable federal laws of the United Arab Emirates. The courts of Abu Dhabi shall have exclusive jurisdiction to settle any such dispute.

#### 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 authorisation of the Interested Party, except as provided for or required by any applicable legislation from a competent authority. Information about the status and validity of class and statutory certificates, including transfers, changes, suspensions, withdrawals of class, 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.
- 7.2 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.
- 7.3 Notwithstanding the general duty of confidentiality owed by the Society to its clients in Article 7.1 above, the Society's clients hereby accept that the Society will 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.
- 7.4 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.

- 7.5 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 have 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 The Society shall not be obliged to perform any obligation towards the Client (including, without limitation, obligation to (a) perform, deliver, accept, sell, purchase, pay or receive money to, from or through a person or entity, or (b) engage in any other act) if this would be in violation of, inconsistent with or expose the Society to punitive measures under any United Nations resolutions and/or under any laws, regulations, decrees, ordinances, orders, demands, requests, rules or requirements of EU, United Kingdom, and/or United States of America and which relate to foreign trade controls, export controls, embargoes or international boycotts (applying, without limitation, to the financing, payment, insurance, transportation, delivery or storage of product and/or services) hereinafter referred to as "Trade Sanctions".
- 8.2 Recurring the above circumstances during the performance of the contract, the Society shall be entitled at its sole and absolute discretion:
- (a) to immediately suspend payment or performance of the Services which are the object of the contract until such;
  - (b) time as the Trading Sanctions are in force;
  - (c) to a full disengagement from the obligation affected by the Trading Sanctions, in the event that the inability to fulfill the said obligation persists until the term provided for the fulfilment hereunder, provided that where the relevant obligation relates to payments for activities and/or Services which have already been delivered, the affected payment obligation shall remain only suspended until such time as the Trading Sanctions no longer apply to the payment ; and/or
  - (d) to terminate the contract, without prejudice of the Society's rights pursuant to Article 4.

#### ARTICLE 9

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

#### ARTICLE 10

When the Society provides its Services to a consumer - i.e. a natural person who does not act within the scope of his business or professional activity - the following provisions do not apply Article 3 (as far as the Society is solely entitled to the authentic interpretation of the Rules); Article 4, (as far as the payment of the fees is also due for Services not

concluded due to causes not attributable to the Interested Party); Article 5 (as far as the exclusion of liability is concerned), and Article 6 (as far as the jurisdiction of a Board of Arbitrators based in Abu Dhabi is concerned).

#### ARTICLE 11

- 11.1 The Society and the Interested Party shall promote safety, protect human health and environment and create safe working conditions for their personnel.
- 11.2 The Interested Party shall guarantee that the working environment in which the Society's Surveyor will be required to work is adequate, safe and in all respect compliant with the applicable legislation and Rules and shall adopt all necessary measures to mitigate and/or control any relevant risk.
- 11.3 Furthermore, in accordance with the applicable legislation and Rules, the Interested Party shall provide the Society with complete and detailed information relevant to any actual or potential specific risk existing in the work areas where the Surveyor will be required to operate and relevant to the performance of the Services as well as with any specific safety measure that the Society's Surveyor is requested to comply with.
- 11.4 The Society reserves not to commence and/or to suspend the Services and/or to terminate the contract, claiming compensation for any damage occurred, if it considers that the safety requirements listed in this Article are not satisfactorily met.



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# CHAPTER 1

# APPLICATION AND GENERAL

## 1 Application

### 1.1 General

**1.1.1** These Rules apply to the floating docks specified in Chapter 2.

Floating docks other than those described herein will be considered on a case-by-case basis.

As far as concerns matters not specifically dealt with in these Rules, reference should be made to the requirements contained in the "Rules for the Classification of Ships", as far as reasonably applicable.

**1.1.2** In general, the requirements regarding fire protection, detection and extinction (hereinafter referred to as "fire protection") are not mandatory for the purpose of classification, except where TASNEEF carries out surveys relevant to fire protection statutory requirements on behalf of the flag Administration. In such cases, fire protection statutory requirements are considered a matter of class and therefore compliance with these requirements is also verified by TASNEEF for classification purposes at class surveys.

Therefore, the requirements of Chapter 6, relevant to fire protection, do not apply for the purpose of classification.

## 2 General

### 2.1 Statutory regulations

**2.1.1** The classification of a floating dock does not absolve the Interested Party from compliance with any requirements issued by Administrations and any other applicable international and national regulations for the safety of life at sea and protection of the marine environment.

### 2.2 Abbreviations

#### 2.2.1 Rules

In these Rules, the wording "Rules" is intended to mean the effective TASNEEF "Rules for the Classification of Ships"; i.e., when in the text, reference is made to Part A of the Rules, reference is to be made to Part A of the Rules for the Classification of Ships. Conversely, the wording "these Rules" is intended to mean these Rules for the classification of floating docks.

# CHAPTER 2 CLASSIFICATION

## 1 Premise

### 1.1 Reference to the Rules

1.1.1 Unless otherwise mentioned below, reference is to be made to the relevant provisions in Part A of the Rules.

## 2 Class notations

### 2.1 Service notation

2.1.1 Floating docks complying with the requirements of these Rules are eligible for the assignment of the service notation **floating dock**. The service notation may be completed by the following additional service features, as applicable, depending on how a particular floating dock is built and/or whether it is provided with special arrangements and equipment that enable it to perform specific services:

- a) **Lifting dock:** when the floating dock is employed for lifting and/or launching floating structures by means of mobile sliding ways.
- b) **Building dock:** when the floating dock is employed for construction and repair of particular floating structures.
- c) **Dry dock:** when the floating dock is employed for construction, maintenance and repair of ships and other floating units.

In order to be classified to perform more than one service, floating docks are to comply with the requirements relevant to each service and the operational provisions necessary to change over from one service to another.

### 2.2 Navigation notations

2.2.1 Floating docks are assigned one of the following navigation notations:

- a) **sheltered area (in the harbour of .....)**
- b) **sheltered area (in harbour waters).**

### 2.3 Annotations in the Certificate of Classification

2.3.1 Particular systems or arrangements, if any, installed on board may be indicated in the Certificate of Classification.

#### 2.3.2 Lifting capacity

Design lifting capacity is the maximum load that has been assumed for the scantlings and that the floating dock can lift and support in satisfactory condition with respect to the service and freeboard  $Ble$ , as defined in Chapter 4. The design lifting capacity is recorded in the Certificate of Classification and the Register of Ships.

The capacity of the floating dock actually measured by lifting a load not greater than its design lifting capacity is also to be recorded in the Certificate of Classification and the Register of Ships.

#### 2.3.3 Systems or machinery not fitted on board

If it is technically and operationally allowable, some systems and/or items of machinery of the floating dock may be fitted ashore or on board a supply vessel.

In that case an appropriate annotation is to be recorded in the Certificate of Classification. That annotation will indicate the systems and machinery not permanently installed on board, but covered by the classification of the floating dock and therefore subject to examinations and tests at periodical surveys, and also subject to checks at any other applicable class surveys.

If the floating dock is provided with a device for the check of longitudinal deflections, an annotation to that effect is to be recorded in the Certificate of Classification.

# CHAPTER 3 SURVEY REQUIREMENTS

## 1 Application and general

### 1.1 Premise

#### 1.1.1 Application

As far as the survey requirements are concerned, those given in this Chapter apply in addition to the relevant provisions in Part A of the Rules.

#### 1.1.2 Expansion of surveys

The surveys provided in this Chapter can be expanded to the extent deemed necessary and, in the case of particular units, modified.

Any parts found not complying with the applicable requirements or in an unsatisfactory condition are to be properly modified or, preferably, replaced, unless otherwise provided by TASNEEF.

#### 1.1.3 Fire protection

As stated under item [1.1.2] of Chapter 1, the requirements regarding fire protection, detection and extinction (hereinafter referred to as "fire protection") are not mandatory for the purpose of classification, except where TASNEEF carries out surveys relevant to fire protection statutory requirements on behalf of the flag Administration. In such cases, fire protection statutory requirements are considered a matter of class and therefore compliance with these requirements is also verified by TASNEEF for classification purposes at class surveys.

## 2 Surveys for the assignment of class

### 2.1 Floating docks surveyed by TASNEEF during construction

#### 2.1.1 Surveys

For floating docks surveyed by TASNEEF during construction, class will be assigned according to the provisions of the Rules, as far as applicable.

#### 2.1.2 Initial tests

At the end of construction, the floating dock will be submitted to the following tests:

##### a) Hydrostatic tests

All the spaces of the floating dock intended to contain liquids are to be tested by a water head equal to the maximum design head, according to the provisions given in the Rules, as far as applicable.

##### b) Manoeuvre tests

Immersion tests up to the maximum depth and emersion tests are to be performed in all design loading cases.

##### c) Working tests of systems and machinery

Systems and machinery are to be submitted to a working tests in accordance with the provisions given in the Rules, as far as applicable.

##### d) Working tests of manoeuvre control systems

The manoeuvre control systems are to be submitted to working test and the calibration of the various components is to be checked.

## 2.2 Floating docks classified after construction

### 2.2.1 Floating docks classed with an IACS Society

The procedure for the assignment of class is in accordance with the provisions of the Rules, as far as applicable.

### 2.2.2 Floating docks not classed with an IACS Society

For existing floating docks that have never been classed by other IACS Societies, the survey for the admission to class is to be a complete survey with additional checks deemed necessary by TASNEEF.

## 3 Surveys for maintenance of class

### 3.1 Biennial surveys

#### 3.1.1 Periodicity

Biennial surveys are to be performed every two years running from the beginning of the class period.

#### 3.1.2 Survey items to be carried out during biennial surveys

At biennial surveys the following items are to be examined and tested, as applicable.

a) Pontoon, top and safety decks, wing wall plating above the light waterline, keel and side blocks and their foundations.

b) Vents and overflow pipes, air pipes extending below decks to form air cushions, overboard scuppers, discharges and intakes, ventilator coamings and closing appliances required as a condition of classification and their coamings, where fitted.

c) Companionways, ladders and guardrails, and other means of protection that may be provided for access to all spaces.

d) All items particularly liable to rapid deterioration.

e) Deflection control system.

At each biennial machinery survey a general examination of machinery, boilers, the electrical system, etc. having the

scope of the annual machinery survey as per Part A, Ch 3, Sec 3, [3] of the Rules is to be carried out.

For particular arrangements, the survey may be extended as deemed necessary to the Surveyor's satisfaction.

### 3.2 Class renewal surveys

#### 3.2.1 Periodicity, surveys in advance and postponements

For all types of floating docks, class renewal surveys are to be carried out not later than 6 years after the previous one.

The first class renewal survey is to be carried out not later than 6 years after the date of entry into operation.

It is the right of the Interested Party to have a class renewal survey carried out in advance or delayed with regard to the regular expiry date. For this purpose, the relevant provisions given in Part A, Ch 2, Sec 2, [4] of the Rules apply.

#### 3.2.2 Survey items to be carried out during class renewal survey

At class renewal surveys all survey requirements for biennial surveys are to be complied with. In addition, the following items are to be examined and tested, as applicable.

- a) All means of protection for openings are to be examined to verify their good condition and readily accessibility.
- b) Pontoon and wing wall tanks are to be cleaned, examined internally, and tested to the satisfaction of the Surveyor. At the discretion of the Surveyor, fuel oil tanks forming part of the main structure need not be examined internally until the floating dock is more than 12 years old.
- c) Spaces above the safety deck are to be examined internally, removing linings, etc. where necessary for examination.
- d) Air pipes extending below deck to form air cushions are also to be examined.
- e) Where the surface of plating is covered with cement, composition or wood sheathing, the covering is to be examined and sounded. If cement or composition is found to be not adhering to the plating it is to be removed for examination of the plating. Where wood sheathing has deteriorated or is badly worn, it is to be removed for examination of the plating.
- f) The means of escape from machinery spaces, crew spaces and spaces in which crew are normally employed are to be examined (not applicable for classification purposes, see [1.1.3]).
- g) Where fitted, sounding pipes are to be examined and the thick steel plate below each sounding pipe for the rod to strike upon is to be securely fixed.
- h) The thickness of any part of the structure where wastage is evident may be required by the Surveyor to be determined by an approved method. Where necessary, the structure is to be renewed by material of approved scantling and specification and the surfaces recoated.

At the first class renewal survey after the floating dock is 24 years old, and at 12-year intervals thereafter, in addition to requirements a) to h) above, the thicknesses of the structure are to be determined by an approved method to assess the

general condition. Two sections of measurements are to be made within the 0,4Lc mid-length of the floating dock. In addition, the Surveyor may require additional measurements to be taken in those areas where he suspects that corrosion and wastage exceed the acceptable limits. The actual scantlings of the floating dock are to be assessed by the Surveyor and reported.

For class renewal survey for machinery, the provisions of Part A, Ch 3, Sec 5, [3] of the Rules apply. In addition, the calibration of the components of the system controlling floating dock manoeuvres is to be performed and thereafter a working test of the system itself is to be carried out.

### 3.3 Bottom survey

#### 3.3.1 Periodicity of survey

The first bottom survey is to be carried out not later than 6 years after the unit entered operation for both steel and concrete docks.

Subsequent bottom surveys are to be carried out at intervals not exceeding 6 years.

Each bottom survey is to be carried out in conjunction with the class renewal survey.

For the steel floating dock the survey includes the thickness measurements of the main zones of the underwater parts, the extent of which depends on the age of the unit.

#### 3.3.2 Bottom survey

Bottom survey means the examination of the outside of the floating dock's bottom and related items. This examination may be carried out with the floating dock either in dry dock (or on a slipway) or afloat: in the former case the survey will be referred to as dry-docking survey, while in the latter case as in-water survey.

The Owner is to notify the Society whenever the outside of the floating dock's bottom and related items can be examined in dry dock or on a slipway.

#### 3.3.3 Bottom survey in dry condition

When a floating drydock is in dry condition, it is to be placed on blocks of sufficient height and with the necessary staging to permit the examination of elements such as shell plating including bottom and bow plating, stern frame, sea chests and valves, appendages.

The outer shell plating is to be visually examined for excessive corrosion, or deterioration due to chafing or contact with the ground or for any undue deformation or buckling.

Due attention is to be given to the plating of end structures (stem and sternframe), and to the connection between the bilge strakes and the bilge keels. Significant plate unevenness or other deterioration which does not necessitate immediate repairs is to be recorded.

Sea chests and their gratings, sea connections and overboard discharge valves and cocks and their fastenings to the hull or sea chests are to be examined.

#### 3.3.4 Bottom survey in-water survey

The bottom in-water survey is to provide the information normally obtained from a bottom survey carried out in dry condition.

The in-water survey may also take form as a combination of two or more of the following:

- heeling of the floating dock for partial examination of the bottom,
- underwater survey by diver,
- underwater survey by remote operated vehicle (R.O.V).

The in-water survey is to be carried out with the ship in sheltered water and preferably with weak tidal streams and currents. The in-water visibility and the cleanliness of the hull below the waterline are to be good enough to permit a meaningful examination which allows the Surveyor and diver to determine the condition of the plating, appendages and welding.

The Society is to be satisfied with the methods of orientation of the divers on the plating, which should make use where necessary of permanent markings on the plating at selected points.

The equipment and the procedure for observing and reporting the survey are to be discussed with the parties involved prior to the in-water survey, and suitable time is to be allowed to permit the diving company to test all equipment beforehand.

The in-water survey is to be carried out by one or more professional divers and/or ROV operator in the presence of a Surveyor. The diver(s) and/or the ROV operator is (are) to be employed by a certified company/firm approved by the Society in accordance with the "Rules for the Certification of Service Suppliers".

If the in-water survey reveals damage or deterioration that requires early attention, the Surveyor may require the floating drydock to be drydocked in order for a detailed survey to be undertaken and the necessary repairs carried out.

Where it is intended to careen the floating dock, consideration is to be given to its stability and longitudinal strength.

Where applicable, such information is to be included in the operating manual.

# CHAPTER 4

# HULL, STABILITY AND MATERIALS

## 1 General

### 1.1 Foreword

1.1.1 These requirements apply, if not otherwise specified, to docks intended to operate in sheltered areas.

Docks for which service in non-sheltered areas is anticipated will be subject to special consideration.

With respect to structural conformation, floating docks may, in general, be subdivided into the following types:

- a) Continuous pontoon and walls dock.
- b) Continuous walls and non-continuous pontoon dock.
- c) Continuous pontoon and non-continuous walls or towers dock.
- d) Non-continuous pontoon and walls dock.

The above docks may or may not be self-docking.

In any case, TASNEEF reserves the right to decide on the applicability of these requirements with respect to the particular structural conformations and service characteristics of the dock.

### 1.2 Definitions and symbols

#### 1.2.1 Pontoon

The pontoon is the structure extending below and between the wing walls and forming the lower part of the dock.

#### 1.2.2 Buoyancy tanks

The buoyancy tanks are watertight compartments, constructed to be empty at all times and hence not provided with any flooding system.

#### 1.2.3 Block Deck or Floor

The block deck or floor is the deck on which blocks are located; in general, it coincides with the upper surface of the pontoon.

#### 1.2.4 Upper deck

The upper deck is the deck joining the top parts of wings of each wall, over all their length.

#### 1.2.5 Safety deck

The safety deck is the lowest watertight deck located above all the ballast tanks and extending over all the length of the dock.

#### 1.2.6 Length

- a) The length  $L_c$  (in m) is the maximum length between the end bulkheads of the part of the dock contributing to buoyancy
- b) The length  $L_{ft}$  (in m) is the overall length of the dock, including platforms, if any.

#### 1.2.7 Breadth

- a) The breadth  $B$  (in m) is the maximum horizontal distance measured between the outer surfaces of the walls of the part of the dock contributing to buoyancy.
- b) The breadth  $B_m$  (in m) is the maximum free distance of the pontoon measured in line with the block deck.
- c) The breadth  $B_u$  (in m) is the maximum available breadth, measured between the internal surfaces of the walls or between possible fixed protrusions.

#### 1.2.8 Depth

- a) The depth  $D$  (in m) is the maximum vertical distance from the moulded line to the upper deck.
- b) The depth  $D_p$  (in m) is the vertical distance measured at  $0,5 L_c$  on the external wing wall from the moulded line to the block deck, theoretically extended, if applicable, up to the outer wall.

#### 1.2.9 Draft

- a) The draft  $l_u$  (in m) is the distance from the top of the blocks to the waterline corresponding to  $B_{li}$ .
- b) The draft  $l_{max}$  (in m) is the distance from the moulded line to the waterline corresponding to  $B_{li}$ .
- c) The draft  $l_{min}$  (in m) is the draft when the dock is in vacant condition.
- d) The draft  $l_{ma}$  (in m) is the maximum working draft.
- e) The draft  $l_{mi}$  (in m) is the minimum working draft.

### 1.3 Documentation to be submitted

1.3.1 For each dock for which supervision during construction is required, documents and details as per Tab I are to be submitted to TASNEEF for approval in three copies.

Where considered necessary, TASNEEF may request the submission of further documents and details.

If composite materials are employed, irrespective of the presence of pre-induced stress conditions on structures (structures in reinforced concrete, pre-compressed reinforced concrete, pre-stressed structures, etc.), in addition to the documents indicated in Tab I, drawings of frames and pre-stressing systems of the various parts, together with the supporting calculations, are to be submitted for approval.

Table 1 : Documentation to be submitted

Document	Document details
Midship Section Scantling plan	<ul style="list-style-type: none"> <li>• required class characteristics</li> <li>• openings on decks and shell</li> <li>• corrosion protection</li> <li>• minimum and extreme drafts</li> <li>• loads on decks</li> <li>• block deck</li> </ul>
Watertight subdivision bulkheads	openings, if any
Watertight and wash bulkheads of ballast tanks	<ul style="list-style-type: none"> <li>• location of air vents</li> <li>• tanks intended to be partially filled</li> <li>• procedures for tank filling and level and pressure control</li> </ul>
Machinery foundations	mass of machinery
Details of section connections (constructional drawing)	
Wall shutters and similar	
General plan of external doors and scuttles	
General plan of ventilation and manholes	use of rooms
Arrangement for handling of loads Structure of load elevators	relevant hull stiffening
Sea water intakes and overboard discharges in general	
Hydrostatic test plan	
Pumping diagrams	
Stability calculations	

## 1.4 Operating Manual

**1.4.1** An Operating Manual is to be prepared for each floating dock, describing the operating condition.

In addition to the characteristic elements of the floating dock itself, the Manual, to be sent for information to TASNEEF, is to report the basic data assumed for the strength calculations (design lifting capacity, load distribution, etc.) and information for verification of stability in the various operative conditions.

## 2 General requirements for design

### 2.1 Stability

#### 2.1.1 General

Floating docks having a length equal to or greater than 24 m are to be provided with suitable transverse stability characteristics complying with the requirements of this item [2.1].

#### 2.1.2 Loading conditions

Stability calculations are to analyse the most severe operative conditions, taking into account the heaviest weight positions, including hanging loads and the possible effects of free surfaces of liquids in tanks.

In particular, for dry docks, the loading conditions which consider water levels lapping the top edge of the block deck

and the top part of the blocks themselves are to be considered.

Moreover, TASNEEF may, at its discretion, request to carry out a stability calculation for the case of an emerged floating dock with displacement as close as possible to full load displacement, with a flooded compartment, eccentric and at one end of the dock, i.e. selected among those involving the most severe conditions from the point of view of stability.

#### 2.1.3 Intact stability requirements

In general, for dry docks the initial metacentric transversal height GM0 of the system ship plus dry dock, considering all the corrections for liquid free surface effects, is to be not less than 1,5 m for docks with design lifting capacity up to 10000 t.

The above-mentioned metacentric height may be linearly reduced for lifting capacities over 10000 t, up to a minimum of 1,0 m for lifting capacities equal to 50000 t or above.

#### 2.1.4 Wind heeling moment (1/7/2025)

The wind heeling moment is to be calculated from the following formula:

$$0,625 \cdot 10^{-4} \cdot V^2AH \text{ (t m)}$$

Where:

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A: the longitudinal projected area of the exposed surface considered at every stage of inclining exposed areas of docked ship (m<sup>2</sup>).

$H = \Delta H + 0,5 d$  (m)

$\Delta H$ : Vertical distance from the center of A to the water line of the dock (m).

d: draught of the dock (m)

V: wind velocity (m/s), the wind velocity is not to be less than 25 m/s in general.

However, the values of the wind velocity depend on the service location and the mode of operation of the dock, and may be considered more precisely in each case.

In general, the point of intersection between the static stability curve and the wind heeling moment curve is under no circumstance to exceed the angle where any part of the pontoon deck or downflooding point submerged.

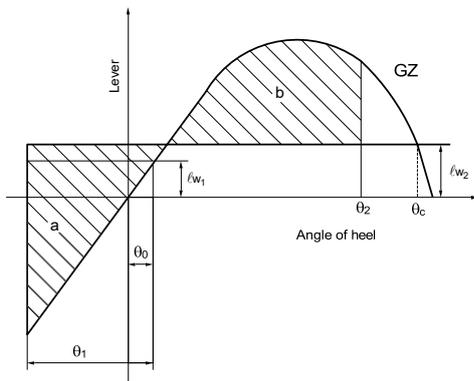
### 2.1.5 Severe wind and rolling criterion (weather criterion)

#### a) Assumptions

The ability of a floating dock to withstand the combined effects of beam wind and rolling is to be demonstrated for each standard condition of loading, with reference to Fig 1 as follows:

- the dock is subjected to a steady wind pressure acting perpendicular to the dock's centreline which results in a steady wind heeling lever ( $\ell_{w1}$ );
- from the resultant angle of equilibrium ( $\theta_0$ ), the dock is assumed to roll owing to wave action to an angle of roll ( $\theta_1$ ) to windward;
- the dock is then subjected to a gust wind pressure which results in a gust wind heeling lever ( $\ell_{w2}$ );
- free surface effects are to be accounted for in the standard conditions of loading.

Figure 1 : Severe wind and rolling



#### b) Criteria

Under the assumptions of a) above, the following criteria are to be complied with:

- the area "b" is to be equal to or greater than the area "a",

where:

a : Area above the GZ curve and below  $\ell_{w2}$ , between  $\theta_R$  and the intersection of  $\ell_{w2}$  with the GZ curve

b : Area above the heeling lever  $\ell_{w2}$  and below the GZ curve, between the intersection of  $\ell_{w2}$  with the GZ curve and  $\theta_2$ .

- the angle of heel under action of steady wind ( $\theta_0$ ) is to be limited to 16° or 80% of the angle of deck edge immersion, whichever is the lesser.

#### c) Heeling levers

The wind heeling levers  $\ell_{w1}$  and  $\ell_{w2}$ , in m, referred to in b) above, are constant values at all angles of inclination and are to be calculated as follows:

$$\ell_{w1} = \frac{PAZ}{1000g\Delta}$$

and

$$\ell_{w2} = 1,5 \ell_{w1}$$

where:

P : 504 N/m<sup>2</sup>

The value of P used for docks positioned in protected locations may be reduced subject to the approval of TASNEEF

A : Projected lateral area, in m<sup>2</sup>, of the portion of the dock and deck cargo above the water-line;

Z : Vertical distance in m, from the centre of A to the centre of the underwater lateral area or approximately to a point at one half the draught;

$\Delta$  : Displacement, in t;

g : 9,81 m/s<sup>2</sup>.

#### d) angles of heel:

For the purpose of calculating the criteria of b) above, the angles in Fig 1 are defined as follows:

$\theta_0$  : Angle of heel, in degrees, under action of steady wind

$\theta_1$  : Angle of roll, in degrees, to windward due to wave action, calculated as follows:

$$\theta_1 = 109kX_1X_2 \sqrt{rs}$$

$\theta_2$  : Angle of downflooding ( $\theta_f$ ) in degrees, either 50° or  $\theta_c$ , whichever is the lesser

$\theta_f$  : Angle of heel in degrees, at which openings in the hull, superstructures or deckhouses which cannot be closed weathertight immerse. In applying this criterion, small openings through which progressive flooding cannot take place need not be considered as open;

$\theta_c$  : Angle in degrees, of second intercept between wind heeling lever  $\ell_{w2}$  and GZ curves

$$\theta_R = \theta_0 = \theta_1$$

$x_1$  : Coefficient defined in Tab 2

- $x_2$  : Coefficient defined in Tab 3
- $k$  : Coefficient  
 $k = 1,0$  for a round-bilged dock having no bilge or bar keels  
 $k = 0,7$  for a dock having sharp bilge  
 For a dock having no bilge keels, a bar keel or both,  $k$  is defined in Tab 4.
- DG : Distance in m, between the centre of gravity and the waterline (positive if centre of gravity is above the waterline, negative if it is below)
- $T_1$  : Mean moulded draught in m, of the dock
- $s$  : Factor defined in Tab 5.

Note 1: The angle of roll  $\theta_1$  for docks with anti-rolling devices is to be determined without taking into account the operations of these devices.

Note 2: The angle of roll  $\theta_1$  may be obtained, in lieu of the above formula, from model tests or full scale measurements.

The rolling period  $T_R$ , in s, is calculated as follows:

$$T_R = \frac{2 C B}{\sqrt{GM}}$$

where:

$$C = 0,373 + 0,023 B/T_1 - 0,043 l_w / 100$$

The symbols in the tables and formula for the rolling period are defined as follows:

- $L_w$  : Length, in m, of the dock at the waterline
- $T_1$  : Mean moulded draught in m, of the dock
- $A_k$  : Total overall area, in  $m^2$ , of bilge keels, or area of the lateral projection of the bar keel, or sum of these areas, or area of the lateral projection of any hull appendages generating added mass during dock roll
- GM : Metacentric height, in m, corrected for free surface effect.

**Table 2 : Values of coefficient  $X_1$**

B/d	$X_1$
$\leq 2,4$	1,00
2,5	0,98
2,6	0,96
2,7	0,95
2,8	0,93
2,9	0,91
3,0	0,90
3,1	0,88
3,2	0,86
3,4	0,82
$\geq 3,5$	0,80

**Note 1:** Intermediate values are to be obtained by linear interpolation.

**Table 3 : Values of coefficient  $X_2$**

$C_r$	$X_2$
$\leq 0,45$	0,75
0,50	0,82
0,55	0,89
0,60	0,95
0,65	0,97
$\geq 0,70$	1,00

**Note 1:** Intermediate values are to be obtained by linear interpolation.

**Table 4 : Values of coefficient  $k$**

$\frac{A_k \times 100}{L \times B}$	$k$
0,0	1,00
1,0	0,98
1,5	0,95
2,0	0,88
2,5	0,79
3,0	0,74
3,5	0,72
$\geq 4,0$	0,70

**Note 1:** Intermediate values are to be obtained by linear interpolation.

**Table 5 : Values of coefficient  $s$**

$T_R$	$s$
$\leq 6$	0,100
7	0,098
8	0,093
12	0,065
14	0,053
16	0,044
18	0,038
$\geq 20$	0,035

**Note 1:** Intermediate values are to be obtained by linear interpolation.

### 2.1.6 Stability booklet (1/7/2025)

Each floating dock is to be provided with a stability booklet, approved by TASNEEF, which contains sufficient information to enable the Master to operate the dock in compliance with the applicable requirements of this item [2.1].

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In particular, the floating dock is to comply with the stability requirements in [2.1.3] and [2.1.4] for each loading condition. However, in case that the floating dock is subjected to transfer voyage, the requirements in [2.1.5] are also to be complied with.

Where any alterations are made to a dock so as to materially affect the stability information supplied to the Master, amended stability information is to be provided. If necessary the dock is to be reinclined.

Stability data and associated plans are to be drawn up in the official language or languages of the issuing country. If the languages used are neither English nor French the text is to include a translation into one of these languages.

The format of the trim and stability booklet and the information included are specified in App 2 of Chapter 3 of Part B of the Rules, as far as applicable.

### 2.2 Freeboard

**2.2.1** The shell freeboard  $Bl_i$ , which is the minimum distance, in millimetres, from the floating dock upper deck to the waterline with the dock at its extreme draft, is to be, in general, not less than 1000 mm. Particular attention is to be paid to the value of the freeboard  $Bl_i$  in the event that shell openings not provided with watertight closing appliances are arranged.

The pontoon freeboard  $Bl_e$ , which is the distance, in mm, measured in way of the longitudinal plane of symmetry from the block deck to the waterline, when the dock is bearing a load equal to its design capacity, is to be, in general, not less than 300 mm.

When the block deck is provided with a camber, the minimum freeboard  $Bl_e$  is to be not less than 75 mm at the pontoon side.

The floating dock is to be provided with a safety deck so that, when all the ballast tanks located below the safety deck are filled, the dock is floating with a draft ensuring a side freeboard  $Bl_i$ . Alternative solutions to the arrangement of the safety deck, such as the arrangement of air cushions below the upper deck, will be subject to special consideration.

### 2.3 Subdivision

#### 2.3.1 General

The dock is to be longitudinally and transversely subdivided into watertight compartments, in order to make it possible to safely obtain the ballast distributions required in load conditions and in the anticipated service conditions.

#### 2.3.2 Extension of bulkheads

The longitudinal and transverse watertight bulkheads are to extend, in height, at least up to the safety deck.

### 2.4 Ventilation

**2.4.1** Quarters, service and machinery spaces and cofferdams are generally to be provided with natural or forced ventilation.

Associated air intakes and outlets to the open are to be arranged, as far as practicable, at heights not less than those required in Part B of the Rules and are to be provided with cut-draught shutters operable from outside.

Particular precautions are to be taken for systems serving spaces likely to be contaminated by toxicants or materials which may give rise to explosive mixtures with air.

### 2.5 Accessibility of spaces

**2.5.1** All spaces and cofferdams are to be accessible for inspection, maintenance and repair.

### 2.6 Corrosion protection

**2.6.1** All metallic parts are to receive at least two coats of antirust paint of recognised effectiveness and adhesion.

Such coating is not required for internal surfaces of spaces intended to contain liquid fuel or mineral or vegetable oils.

The application of paints or other coatings is to be carried out in accordance with good practice and coating manufacturer prescriptions and taking into due account the compatibility of the types of coatings used in subsequent layers.

## 3 Materials and connections

### 3.1 Steel docks

#### 3.1.1 General

Steels used for the construction of docks are to comply with the requirements indicated in Part D, Ch 2, Sec I of the Rules, or to have equivalent characteristics, at the discretion of TASNEEF.

Connections of the various parts are to be carried out in compliance with the requirements of Part B, Ch 12, Sec I of the Rules.

#### 3.1.2 Grades and types of steel

Depending on the types of steel, the grades to be used are in general those given in:

- Tab 6 for the shell of the safety deck and the upper plating strake of wing walls contributing to longitudinal strength and
- Tab 7 for the remaining elements contributing to longitudinal strength, not included in the above, but of particular local importance.

For structural elements not included among those considered in Tab 6 and Tab 7, steel grades A, B or AH are to be used, irrespective of the thickness.

Wherever necessary, steels of higher grades than those mentioned above may be required by TASNEEF.

**Table 6 : Grades of steel to be used for the shell of the safety deck and the upper plating strake of wing walls contributing to longitudinal strength**

Thickness	$s \leq 20$ mm	$20 < s \leq 25$ mm	$25 < s \leq 40$ mm	$s > 40$ mm
Normal strength	A and B	B	D	E
Higher strength steels	AH	AH	DH	EH

**Table 7 : Grades of steel to be used for elements contributing to longitudinal strength, not included among those considered in Tab 2, but of particular local importance**

Thickness	$s \leq 30$ mm	$30 < s \leq 40$ mm	$s > 40$ mm
Normal strength	A and B	B	E
Higher strength steels	AH	AH	DH

**Table 8**

Lifting capacity	$\leq 40000$ t	50000 t	60000 t	70000 t	80000 t	90000 t	100000 t
Coefficient C	0,8	0,85	0,89	0,92	0,95	0,97	0,99

## 3.2 Docks in reinforced concrete or in pre-stressed reinforced concrete

3.2.1 Docks in reinforced concrete or in pre-stressed reinforced concrete are considered by TASNEEF on a case-by-case basis.

# 4 General requirements for scantlings

## 4.1 General

4.1.1 The scantlings of the dock are to be such that the indicative values of the state of the structure obtained by applying the requirements for the check of the longitudinal, transverse and local strength given in the following items are no greater than the values of the allowable state.

The scantlings of docks in reinforced concrete or in pre-stressed reinforced concrete are considered by TASNEEF on a case-by-case basis.

States exceeding the allowable state, but not in excess of the limit state, may be permitted at TASNEEF'S discretion under particular exceptional circumstances.

## 4.2 Allowable state and limit state

### 4.2.1 Definitions

- Allowable state: the whole of the allowable stresses and global and local deformations.
- Limit state: the whole of the stresses and global and local deformations beyond which the structure loses its functional characteristics.
- State of the structure: the whole of the stresses and global and local deformations of the structure.

The allowable state and limit state are defined with reference to the mechanical characteristics of materials and the stability conditions of elastic equilibrium of the structure.

## 4.2.2 Steel docks

- Allowable stresses:

$$\sigma_{id\ amm} = 160/K, \text{ in N/mm}^2$$

$$\tau_{am} = 90/K, \text{ in N/mm}^2$$

The values of the coefficient K are those indicated in Part B of the Rules, in respect of the steel grade.

- Limit stresses:

$$\sigma_{id\ lim} = 0,9 \sigma_{sn}$$

$$\tau_{am} = 0,52 \sigma_{sn}$$

where  $\sigma_{sn}$  is the nominal yielding stress of the material.

Stress values less than those indicated in items a) and b) may be assumed, at TASNEEF'S discretion, with respect to the requirement of granting adequate safety for possible instability phenomena.

## 4.3 Direct calculations

4.3.1 When checking the constructional drawings, TASNEEF may consider material distribution and scantlings other than those obtained applying the requirements for the check of longitudinal, transversal and local strength given in the following items, provided that it is demonstrated, by means of direct calculations based on theoretical assumptions and/or experimental results, that the allowable state or, for exceptional load conditions, the limit state is not exceeded.

Direct calculations made in accordance with the most advanced techniques are to be carried out whenever requested by TASNEEF and in general in the case of unusual structures or docks of large dimensions or particular characteristics.

TASNEEF reserves the right to require structural checks, also taking into account particular conditions which may exceptionally occur during the dock operation.

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The direct calculations are to be carried out for the most severe anticipated realistic load conditions.

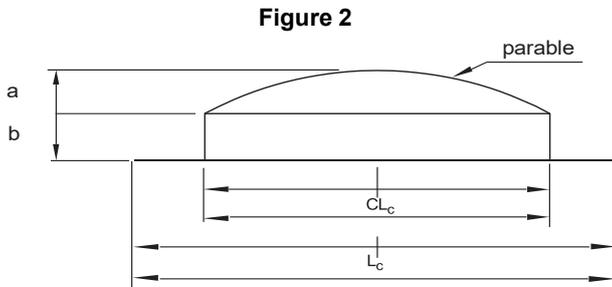
In particular, if the hydrostatic loads on the local structures are determined with respect to the differential heads anticipated during operation and it is possible that, due to damage, said heads may be exceeded, the check with the load condition due to the extreme hydrostatic head which may be assumed on the structure is to be carried out.

### 4.4 Longitudinal strength

#### 4.4.1 Load condition

The longitudinal strength is to be verified for dock operative conditions, with the waterline corresponding to the pontoon freeboard  $B_{ie}$ , with a structure with load equal to the design lifting capacity of the dock arranged on the floor and, as far as practicable, symmetrically on length.

In the absence of more precise data, the conventional distribution of ship loads shown in Fig 2 may be assumed for dry docks.



$$a = 5,3 P / (CL_c) \text{ (kN/m)}$$

$$b = 6,3 P / (CL_c) \text{ (kN/m)}$$

- $L_c$  : length of the dock (see [1.2.6]), in m  
 $P$  : design lifting capacity of the dock (see Ch 2, [2.3.2]), in t  
 $C$  : coefficient given by the ratio between the length of the shortest ship intended to be lifted and the length of the dock, to be assumed not more than the values given in Tab 8 as a function of the lifting capacity.

#### 4.4.2 Scantlings of the midship section

The scantlings of the midship section of the dock are to be such that, in the presence of the bending moment derived from the load condition described in [4.4.1], the state of the structure does not exceed the allowable state.

Whenever more accurate determinations are lacking, the values of bending moment given by the following equations may be conventionally assumed:

- a) sagging bending moment, in kN m:

$$M_{sag} = (1,25 - 1,10 C) P L_c$$

- b) hogging bending moment, in kN m:

$$M_{hag} = 0,5 M_{sag}$$

where  $P$ ,  $L_c$ ,  $C$  have the meanings given in [4.4.1].

Where a non-uniform ballast distribution is foreseen, it is to be checked that, in the same load condition but with uniformly distributed ballast, the structure state does not exceed the limit state.

#### 4.4.3 Extension of the end scantlings

The scantlings of the main section are to be kept over a length equal to at least to  $0,4 L_c$  in the middle, and then may be gradually reduced in way of the ends.

#### 4.4.4 Non-continuous pontoon and walls docks

For non-continuous pontoon and walls docks the bending moment and shearing stress are to be determined taking into account the connections between the various elements.

The Interested Parties are to supply documentation certifying that in the most severe conditions of actual operation, to be reported in the operating manual, the dock deformations are compatible with the safety of the lifted structure.

### 4.5 Transverse strength

#### 4.5.1 General

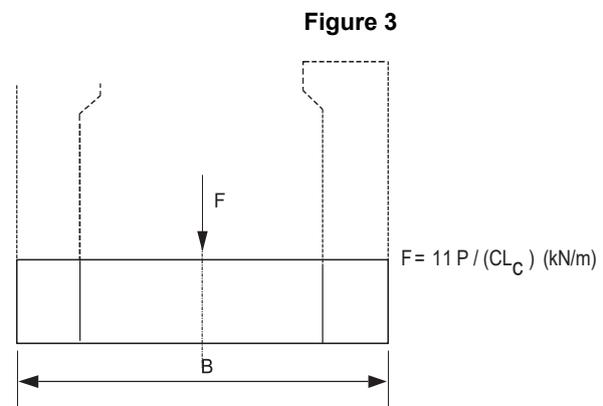
The transverse strength of the dock is to be checked both in the middle and in the end areas and scantlings are to be such that, with the dock in the load conditions indicated in [4.4.1], the state of the structure does not exceed the allowable state.

Whenever more exact data are not available and heavier load conditions are not anticipated, the conventional check criteria given in the following items may be assumed.

#### 4.5.2 Dry Docks

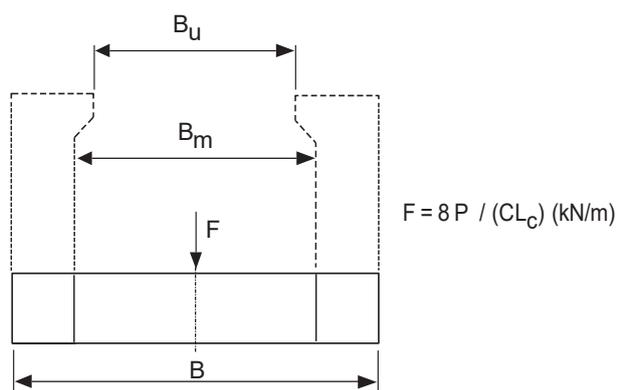
- a) Load on floor

- 1) For continuous pontoon dry docks with lifting capacity  $P \leq 40000$  t, the load condition indicated in Fig 3 is to be considered.



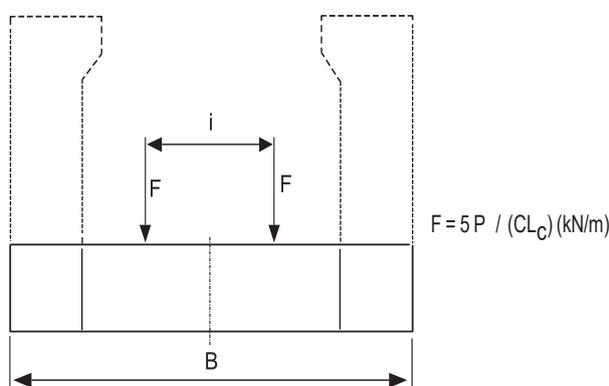
- 2) For continuous pontoon dry docks with lifting capacity  $P > 40000$  t, the heavier of the load conditions indicated in Fig 4 and Fig 5 is to be considered.

Figure 4



- 3) For non-continuous pontoon dry docks, the load condition  $F$  indicated in Fig 3 is to be considered for the whole length of the dock.

Figure 5



The symbols in Fig 3, 4 and 5 indicate:

$i$  : minimum centre distance between two rows of side blocks, in m

$P, L_c, C$  : quantities described in [4.4.1]

$B, B_m, B_u$ : breadths described in [1.2.7]

b) Bending moment and shear force

- 1) Transverse sagging bending moment  $M_{t \text{ ins}}$ , per length unit of the dock, in kNm/m

$$M_{t \text{ sag}} = 0,125 FB$$

where  $F$  and  $B$  are the quantities indicated in a) of this item [4.5.2]

- 2) Transverse hogging bending moment, per length unit of the dock, in kNm/m

$$M_{t \text{ hag}} = (D_v \cdot B) / L_c$$

where  $D_v$  is the light displacement of the dock, in tonnes

- 3) Shear force

$T$  = the greater value of shear force per length unit of the dock, in kN/m, given by the following two relations:

$$T_1 = 5(D_v \cdot B_m) / L_c B$$

$$T_2 = 0,6 F$$

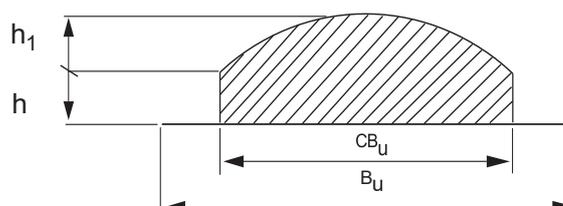
where  $D_v, B_m, B, L_c$  assume the values defined above.

### 4.5.3 Building docks

a) Load on floor

Whenever the load that may be assumed on the transverse sections of the dock may be reasonably represented by a concentrated force but it is more consistently represented by a continuous distribution, the conventional load assumes the shape illustrated by Fig 6.

Figure 6



$$h_1 = 5,4 P / (C^2 L_c B_u) \text{ (kN/m)}$$

$$h = 6,4 P / (C^2 L_c B_u) \text{ (kN/m)}$$

where  $P, C, L_c, B_u$  are the quantities indicated in [4.5.2] and the total value of the dashed area is equal to  $P/(C L_c)$  in t per length unit of the dock.

b) Bending moment and shear force

- 1) Transverse sagging bending moment per length unit of the dock, kNm/m

$$M_{t \text{ sag}} = (1,25 - C \cdot B_u / B) B \cdot P / (C L_c)$$

- 2) Transverse hogging bending moment per length unit of the dock, kNm/m

$$M_{t \text{ hag}} = (D_v \cdot B) / L_c$$

- 3) Shear force

$T$  = the greater value of the shear force per length unit of the dock, kN/m, given by the following two relations:

$$T_1 = 5 (D_v \cdot B_m) / (L_c B)$$

$$T_2 = (1 - C B_u / B) 6P / (C L_c)$$

$D_v, B$  and  $B_m$  have the meanings defined above.

### 4.6 Local strength

#### 4.6.1 General

The structural scantlings determined applying the requirements for the check of the longitudinal and transverse strength are to be verified in order to ensure that the allowable state is not exceeded due to local loads. The conventional calculation heads, to be assumed for the purpose of the above-mentioned checks for the various parts of the dock, are given in [4.6.2].

As an alternative, the extreme differential heads anticipated in operation may be considered in order to determine the hydrostatic loads acting on the various parts of the dock; in such case a detailed description of the methods of operation and the checks foreseen is to be submitted to TASNEEF for examination.

## Chapter 4

Relevant directions are to be reported in the operating manual of the dock.

When the check of the local strength of the structure is carried out considering the loads due to the extreme differential loads, it is also to be verified that, in the presence of the heaviest load foreseen in the following items, the state of structures is compatible with the limit state. TASNEEF may waive this requirement, provided that a double check system is foreseen, to be submitted for prior approval, ensuring that in the areas considered the conditions foreseen in the calculation are never exceeded.

### 4.6.2 Calculation heads

The calculation heads to be used for the structural scantlings are specified in this item, where pdr indicates the reference point, intended as the lowest edge of the plate or the centre of the area supported by the beam, as applicable.

- a) Bottom and wing walls
  - 1) From outside inward: vertical distance from pdr to the extreme draft line, in m.
  - 2) From inside outward, for ballast tanks and storage tanks, the greater of the following values:
    - 2/3 of the vertical distance from pdr to the upper edge of the overflow, in m;
    - vertical distance from pdr to 2,5 m above the highest point of the tank, in m.
  - 3) Minimum value: 2,5 m.
- b) Ballast tanks and storage tanks
  - 1) In the case of gravity filling, the greater of the following values:
    - vertical distance from pdr to the extreme draft line, in m;
    - vertical distance from the internal level of ballast or storage tanks to the extreme draft line, in m.
  - 2) In the case of filling by means of pumps, the greater of the following values:
    - 2/3 of the vertical distance from pdr to the upper edge of the overflow, in m;
    - vertical distance from pdr to 2,5 m above the highest point of the tank, in m.
  - 3) Minimum value: 2,5 m.
- c) Safety deck
  - 1) The greater of the following hydrostatic heads:
    - vertical distance from pdr to upper deck, in m;
    - vertical distance from the internal level of tanks under the safety deck to the extreme draft line in the case of gravity filling of tanks, in m.
  - 2) Minimum value: 2,5 m.
- d) Block deck or floor

Hydrostatic head equal to the vertical distance from pdr to the extreme draft line, in m, to be assumed in any case not greater than 2,5 m.
- e) Upper deck

Conventional hydrostatic head equal to 1,5 m.
- f) Blocks

The load on blocks is to be assumed equal to the value foreseen in the particular construction or in the operating manual and, in any case, for keel blocks, not less than the value, in kN, given by the formula:

$$P_B = 12 P/N$$

where:

P = dock lifting capacity, in t

N = number of keel blocks.

## CHAPTER 5

## MACHINERY AND SYSTEMS

### 1 Machinery and piping systems

#### 1.1 General

**1.1.1** Machinery and piping systems essential for the dock operation are to be constructed and installed, as far as applicable and practicable, in compliance with the requirements of Part C, Ch I of the Rules.

Arrangements to discharge ballast water are to be provided in such a way that at least two pumps may be used to drain each tank which may be flooded.

#### 1.2 Height of air pipes

##### 1.2.1 (1/7/2025)

The height of air pipes is to be at least at 1000 mm from the waterline corresponding to the maximum immersion of the floating docks.

### 2 Electrical installations

#### 2.1 General

**2.1.1** The components of the electrical installation are to be constructed and installed in compliance with the requirements of Part C, Chapter 2 of the Rules.

Parts constructed in compliance with national or international regulations for industrial installations will be specially considered.

In this last case particular attention is to be given to the environmental conditions anticipated for the dock operations, and to the precautions taken for maintenance.

**2.1.2** The testing of the electrical installation is to include the following phases:

- inspection and test of components
- check of the arrangement of components
- final test of the installation.

### 3 Documentation to be submitted

#### 3.1 General

**3.1.1** Documents and details relating to machinery and systems required in Part C, Chapters 1 and 2, as far as reasonably applicable, are to be submitted to TASNEEF for approval.

# CHAPTER 6 FIRE PROTECTION

## 1 Application

### 1.1 General

1.1.1 As stated under [1.1.2] of Chapter 1, the requirements of this Chapter 6 are not applicable for the purpose of classification, except where TASNEEF carries out plan approval and surveys relevant to fire protection statutory requirements on behalf of the flag Administration. In such cases, fire protection statutory requirements are considered a matter of class and therefore compliance with these requirements is also verified by TASNEEF for classification purposes.

## 2 General

### 2.1 Foreword

2.1.1 The requirements for fire protection of the floating docks defined in this Chapter do not consider the lifted objects.

2.1.2 Equipment listed in [2.2] of Section 1 of TASNEEF Rules for fire protection, detection and extinction for the issue and maintenance of statutory certificates other than SOLAS certificates is to be type approved by TASNEEF.

## 3 Structural fire protection and means of escape

### 3.1 Structures

3.1.1 Caissons, pontoons, side walls, bulkheads, decks and deckhouses are to be made of one of the materials indicated in [3] of Chapter 4. However, deckhouses, walls and internal divisions may also be made of other suitable material provided that they are fitted, whenever necessary, with adequate fire insulation so that, in case of fire in such spaces, the structure is prevented from collapsing. Alternative but equivalent solutions will be specially considered by TASNEEF.

### 3.2 References

3.2.1 The requirements of items [1.1.4] to [1.1.7], [1.3], [2.1.2], [2.1.3] and [2.2] of Section 3 of TASNEEF Rules for fire protection, detection and extinction for the issue of statutory certificates other than SOLAS certificates are to be applied.

## 4 Fire extinction

### 4.1 Water fire-fighting system (fire main)

#### 4.1.1 General

- a) All docks are to be provided with fire pumps, piping, hydrants and hoses in compliance with the requirements contained in this item [4.1].
- b) Docks with lifting capacity less than 200 t are to be provided with at least one fixed hand pump.
- c) Docks with lifting capacity equal to 200 t or above but less than 1000 t are to be provided with at least one pump operated by mechanical energy and one hand pump.
- d) Docks with lifting capacity equal to 1000 t or above but less than 2000 t are to be provided with not less than two independent pumps operated by mechanical energy, preferably arranged on each side of the dock.
- e) In addition, for docks with lifting capacity of 2000 t and above, in case a fire in a compartment might put all the fire pumps out of service simultaneously, an independent emergency pump is to be provided.

The capacity of the emergency pump will be determined on a case-by-case basis.

The emergency pump is to have independent sea water intake and connection to the fire main and is to be located in a promptly accessible area which is not likely to be cut off by a fire in the area of the main pumps.

A valve suitable for cutting off the connection between the main pumps and the fire main is to be fitted.

Such valve is to be located in a promptly accessible position outside the main fire pump room.

Where fire-fighting installations that may be used promptly are available ashore, the emergency pump may not be required.

#### 4.1.2 Hydrants, hoses and nozzles

- a) One hose every 30 m of length of the dock is to be fitted on board; hoses are to be distributed along the dock sides.

In any case, not less than 6 hoses are to be fitted on board docks with capacity equal to 1000 t or above and not less than 4 hoses on board docks with smaller capacity.

The hoses required for machinery and auxiliary boiler rooms are not included in the above-mentioned numbers.

- b) The number and location of hydrants are to be such that at least two jets of water not coming from the same hydrant, one of which is from a single length of hose

only, may reach every part of the dock that is normally accessible in every operative condition.

In machinery spaces with an aggregate total power output of not less than 750 kW, two hydrants are to be provided, whilst one hydrant only may be accepted for machinery rooms with smaller power output.

#### 4.1.3 Characteristics of pumps, piping, hydrants, and hoses

- a) Docks with capacity equal to 2000 t or above: the diameter of fire mains, the pressure at hydrants and the capacity of fire pumps are to be in compliance, respectively, with items [1.4.1] c), [1.4.1] f) and [1.4.2] d) of Section 3 of TASNEEF Rules for fire protection, detection and extinction for the issue of statutory certificates other than SOLAS certificates.
- b) Docks with capacity equal to 1000 t or more but less than 2000 t: the requirements of a) above generally apply except that, with two pumps simultaneously delivering the required quantity of water through the nozzles, the minimum pressure to be maintained at all hydrants is to be such as to ensure that the above nozzles can project the required jets of water to a distance of 12 m.
- c) Docks with capacity less than 1000 t: where only one fire pump is provided, the minimum pressure specified in item b) above is to be maintained with such pump delivering the maximum required quantity of water. For docks having a capacity less than 200 t, the minimum distance for the water jet may be 8 m.
- d) The fire main is to be located outside machinery spaces and is to be constructed with fire- and heat-resistant materials.

Hydrants are to be located in easily accessible positions and piping is to be laid in such a way as to prevent it from being damaged.

Unless a hose and a nozzle are provided for each hydrant, connections of hoses and nozzles are to be completely interchangeable.

- e) The washing line of the deck may be used as the fire main if it complies with the requirements of these Rules.
- f) Fire hoses are to be of non-perishable material approved by TASNEEF and are to be sufficient in length to project a jet of water to any of the spaces in which they may be required to be used. Each hose is to be provided with a nozzle and the necessary couplings.

Fire hoses are, together with any necessary fittings and tools, to be kept ready for use in conspicuous positions near the water service hydrants or connections. Fire hoses are to have a length of at least 10 m, but not more than:

- 1) 15 m in machinery spaces;
  - 2) 20 m in other spaces and open decks; and
  - 3) 25 m for open decks on docks with a maximum breadth in excess of 30 m.
- g) Standard nozzle sizes are to be 12 mm, 16 mm and 19 mm or as near thereto as possible. Larger diameter nozzles may be permitted at the discretion of TASNEEF. For

accommodation and service spaces, a nozzle size greater than 12 mm need not be used.

For machinery spaces and exterior locations, the nozzle size is to be such as to obtain the maximum discharge possible from two jets at the pressure mentioned in a) from the smallest pump, provided that a nozzle size greater than 19 mm need not be used.

Nozzles are to be of an approved dual-purpose type (i.e. spray/jet type) incorporating a shut-off.

## 4.2 Fire-fighting arrangements in spaces containing auxiliary boilers or other installations for liquid fuel

**4.2.1** For docks of lifting capacity equal to 1000 t or above, in spaces where oil fired auxiliary boilers are installed, having working pressure over 0,18 N/mm<sup>2</sup>, or in spaces containing fuel oil units, one of the following fixed fire-extinguishing systems is to be provided:

- a) pressure water-spraying system;
- b) gas system or equivalent;
- c) high expansion foam system.

Fire-fighting arrangements for docks with lifting capacity less than 1000 t will be specially considered.

**4.2.2** There are to be at least two portable foam fire extinguishers or equivalent in each firing space in each boiler room and each space in which a part of the fuel oil installation is situated. In addition, there is to be at least one fire extinguisher for each burner; the total capacity of the additional extinguishers need not exceed 45 l for any one boiler room. In the case of domestic boilers of less than 175 kW, TASNEEF may consider relaxation of the requirements of this item.

In each firing space there is to be a receptacle containing sand, sawdust impregnated with soda, or other approved dry material, in such quantity as may be required by TASNEEF.

Alternatively, an approved portable extinguisher may be provided.

## 4.3 Fire-fighting arrangements in spaces containing internal combustion engines or gas turbines

**4.3.1** In spaces where internal combustion engines or gas turbines with total power output of not less than 750 kW are installed, if the dock lifting capacity is equal to 1000 t or above, the following equipment is to be provided:

- a) one of the systems indicated in [4.2.1];
- b) one foam extinguisher with a capacity of not less than 45 litres in each engine room and, in addition, one portable foam fire extinguisher for each 750 kW or fraction thereof; the total number of said portable extinguishers is not to be less than 2 and need not exceed 6.

The arrangements foreseen in b) are sufficient for docks with lifting capacity less than 1000 t.

For docks with lifting capacity less than 200 t, the 45-litre extinguisher is not required.

**4.3.2** If the engine and boiler rooms are not entirely separate, or if fuel oil can drain from the boiler room into the engine room bilges, the combined engine and boiler rooms are to be considered as one compartment.

**4.4 Fixed pressure water-spraying fire-extinguishing system**

**4.4.1** The system is to comply with the requirements of item [1.9] of Section 3 of TASNEEF Rules for fire protection, detection and extinction for the issue of statutory certificates other than SOLAS certificates.

**4.5 Fixed gas fire-extinguishing system for machinery spaces**

**4.5.1** The system is to comply with the requirements of item [1.7], Section 3 of TASNEEF Rules for fire protection, detection and extinction for the issue of statutory certificates other than SOLAS certificates.

**4.6 Fixed foam fire-extinguishing system**

**4.6.1** The system is to comply with the requirements of item [1.8] of Section 3 of TASNEEF Rules for fire protection, detection and extinction for the issue and maintenance of statutory certificates other than SOLAS certificates.

**4.7 Portable fire extinguishers**

**4.7.1** Control stations and accommodation and service spaces are to be provided with portable fire extinguishers deemed suitable by TASNEEF.

- a) A portable foam fire extinguisher or equivalent is to be fitted in galleys and spaces containing boilers for domestic use.
- b) A portable foam fire-extinguisher or equivalent is to be arranged in paint lockers or other spaces containing easily flammable products for use on board.
- c) A CO<sub>2</sub> or dry powder portable fire extinguisher is to be arranged in the proximity of switchboards or other electrical panels of power equal to 20 kW or above.

**4.7.2** A suitable number of spare charges is to be provided on board.

For fire extinguishers which cannot be recharged on board, additional portable fire extinguishers are to be provided in lieu of spare charges.

**4.7.3** One of the portable fire extinguishers to be provided in each room is to be arranged near the entrance.

**4.8 Portable fire-fighting equipment**

**4.8.1** In addition to the requirements of the above items, the equipment reported in Tab I is to be provided on board.

Relaxation may be allowed by TASNEEF based on case-by-case considerations.

**Table 1**

Item	G.T. < 500	G.T. ≥ 500
Fireman's outfit (see (I))		1
Rescue axe	2	2
Crowbar		1
Buckets, with lines	2	4
Fire-resistant blanket		1 (for G.T. ≥ 1000)
Fireman's belt, with toolkit		1 (for G.T. ≥ 1000)
Electrician's bag		1 (for G.T. ≥ 1000)
Portable electric lamp	1	1
Spare bulbs and batteries	1	1
(I) A fireman's outfit consists of: <ul style="list-style-type: none"> <li>• one protective suit, complete with hood and rigid helmet, boots and gloves</li> <li>• one portable electric safety lamp;</li> <li>• one fireman's axe;</li> <li>• one breathing apparatus of a type deemed suitable by TASNEEF;</li> <li>• one lifeline having a breaking load not less than 3,5 kN.</li> </ul>		