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VERITAS**

Marine Division

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# **Rules for the Classification of Inland Navigation Vessels**

## **PART A – Classification and Surveys**

### **Chapters 1 – 2 – 3**

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**BUREAU  
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## ARTICLE 1

1.1. - BUREAU VERITAS is a Society the purpose of whose Marine Division (the "Society") is the classification ("Classification") of any ship or vessel or structure of any type or part of it or system therein collectively hereinafter referred to as a "Unit" whether linked to shore, river bed or sea bed or not, whether operated or located at sea or in inland waters or partly on land, including submarines, hovercrafts, drilling rigs, offshore installations of any type and of any purpose, their related and ancillary equipment, subsea or not, such as well head and pipelines, mooring legs and mooring points or otherwise as decided by the Society.

The Society:

- prepares and publishes Rules for classification, Guidance Notes and other documents ("Rules");
- issues Certificates, Attestations and Reports following its interventions ("Certificates");
- publishes Registers.

1.2. - The Society also participates in the application of National and International Regulations or Standards, in particular by delegation from different Governments. Those activities are hereafter collectively referred to as "Certification".

1.3. - The Society can also provide services related to Classification and Certification such as ship and company safety management certification; ship and port security certification, training activities; all activities and duties incidental thereto such as documentation on any supporting means, software, instrumentation, measurements, tests and trials on board.

1.4. - The interventions mentioned in 1.1., 1.2. and 1.3. are referred to as "Services". The party and/or its representative requesting the services is hereinafter referred to as the "Client". **The Services are prepared and carried out on the assumption that the Clients are aware of the International Maritime and/or Offshore Industry (the "Industry") practices.**

1.5. - The Society is neither and may not be considered as an Underwriter, Broker in ship's sale or chartering, Expert in Unit's valuation, Consulting Engineer, Controller, Naval Architect, Manufacturer, Shipbuilder, Repair yard, Charterer or Shipowner who are not relieved of any of their expressed or implied obligations by the interventions of the Society.

## ARTICLE 2

2.1. - Classification is the appraisal given by the Society for its Client, at a certain date, following surveys by its Surveyors along the lines specified in Articles 3 and 4 hereafter on the level of compliance of a Unit to its Rules or part of them. This appraisal is represented by a class entered on the Certificates and periodically transcribed in the Society's Register.

2.2. - Certification is carried out by the Society along the same lines as set out in Articles 3 and 4 hereafter and with reference to the applicable National and International Regulations or Standards.

2.3. - **It is incumbent upon the Client to maintain the condition of the Unit after surveys, to present the Unit for surveys and to inform the Society without delay of circumstances which may affect the given appraisal or cause to modify its scope.**

2.4. - The Client is to give to the Society all access and information necessary for the safe and efficient performance of the requested Services. The Client is the sole responsible for the conditions of presentation of the Unit for tests, trials and surveys and the conditions under which tests and trials are carried out.

## ARTICLE 3

3.1. - **The Rules, procedures and instructions of the Society take into account at the date of their preparation the state of currently available and proven technical knowledge of the Industry. They are not a standard or a code of construction neither a guide for maintenance, a safety handbook or a guide of professional practices, all of which are assumed to be known in detail and carefully followed at all times by the Client.**

Committees consisting of personalities from the Industry contribute to the development of those documents.

3.2. - **The Society only is qualified to apply its Rules and to interpret them. Any reference to them has no effect unless it involves the Society's intervention.**

3.3. - The Services of the Society are carried out by professional Surveyors according to the applicable Rules and to the Code of Ethics of the Society. Surveyors have authority to decide locally on matters related to classification and certification of the Units, unless the Rules provide otherwise.

3.4. - **The operations of the Society in providing its Services are exclusively conducted by way of random inspections and do not in any circumstances involve monitoring or exhaustive verification.**

## ARTICLE 4

4.1. - The Society, acting by reference to its Rules:

- reviews the construction arrangements of the Units as shown on the documents presented by the Client;
- conducts surveys at the place of their construction;
- classes Units and enters their class in its Register;
- surveys periodically the Units in service to note that the requirements for the maintenance of class are met.

**The Client is to inform the Society without delay of circumstances which may cause the date or the extent of the surveys to be changed.**

## ARTICLE 5

5.1. - **The Society acts as a provider of services. This cannot be construed as an obligation bearing on the Society to obtain a result or as a warranty.**

5.2. - **The certificates issued by the Society pursuant to 5.1. here above are a statement on the level of compliance of the Unit to its Rules or to the documents of reference for the Services provided for.**

In particular, the Society does not engage in any work relating to the design, building, production or repair checks, neither in the operation of the Units or in their trade, neither in any advisory services, and cannot be held liable on those accounts. Its certificates cannot be construed as an implied or express warranty of safety, fitness for the purpose, seaworthiness of the Unit or of its value for sale, insurance or chartering.

5.3. - **The Society does not declare the acceptance or commissioning of a Unit, nor of its construction in conformity with its design, that being the exclusive responsibility of its owner or builder, respectively.**

# MARINE DIVISION GENERAL CONDITIONS

5.4. - The Services of the Society cannot create any obligation bearing on the Society or constitute any warranty of proper operation, beyond any representation set forth in the Rules, of any Unit, equipment or machinery, computer software of any sort or other comparable concepts that has been subject to any survey by the Society.

## ARTICLE 6

6.1. - The Society accepts no responsibility for the use of information related to its Services which was not provided for the purpose by the Society or with its assistance.

6.2. - **If the Services of the Society cause to the Client a damage which is proved to be the direct and reasonably foreseeable consequence of an error or omission of the Society, its liability towards the Client is limited to ten times the amount of fee paid for the Service having caused the damage, provided however that this limit shall be subject to a minimum of eight thousand (8,000) Euro, and to a maximum which is the greater of eight hundred thousand (800,000) Euro and one and a half times the above mentioned fee.**

**The Society bears no liability for indirect or consequential loss such as e.g. loss of revenue, loss of profit, loss of production, loss relative to other contracts and indemnities for termination of other agreements.**

6.3. - All claims are to be presented to the Society in writing within three months of the date when the Services were supplied or (if later) the date when the events which are relied on were first known to the Client, and any claim which is not so presented shall be deemed waived and absolutely barred. Time is to be interrupted thereafter with the same periodicity.

## ARTICLE 7

7.1. - Requests for Services are to be in writing.

7.2. - **Either the Client or the Society can terminate as of right the requested Services after giving the other party thirty days' written notice, for convenience, and without prejudice to the provisions in Article 8 hereunder.**

7.3. - The class granted to the concerned Units and the previously issued certificates remain valid until the date of effect of the notice issued according to 7.2. here above subject to compliance with 2.3. here above and Article 8 hereunder.

7.4. - The contract for classification and/or certification of a Unit cannot be transferred neither assigned.

## ARTICLE 8

8.1. - The Services of the Society, whether completed or not, involve, for the part carried out, the payment of fee upon receipt of the invoice and the reimbursement of the expenses incurred.

8.2. **Overdue amounts are increased as of right by interest in accordance with the applicable legislation.**

8.3. - **The class of a Unit may be suspended in the event of non-payment of fee after a first unfruitful notification to pay.**

## ARTICLE 9

9.1. - The documents and data provided to or prepared by the Society for its Services, and the information available to the Society, are treated as confidential. However:

- clients have access to the data they have provided to the Society and, during the period of classification of the Unit for them, to the classification file consisting of survey reports and certificates which have been prepared at any time by the Society for the classification of the Unit;
- copy of the documents made available for the classification of the Unit and of available survey reports can be handed over to another Classification Society, where appropriate, in case of the Unit's transfer of class;
- the data relative to the evolution of the Register, to the class suspension and to the survey status of the Units, as well as general technical information related to hull and equipment damages, are passed on to IACS (International Association of Classification Societies) according to the association working rules;
- the certificates, documents and information relative to the Units classed with the Society may be reviewed during certifying bodies audits and are disclosed upon order of the concerned governmental or inter-governmental authorities or of a Court having jurisdiction.

The documents and data are subject to a file management plan.

## ARTICLE 10

10.1. - Any delay or shortcoming in the performance of its Services by the Society arising from an event not reasonably foreseeable by or beyond the control of the Society shall be deemed not to be a breach of contract.

## ARTICLE 11

11.1. - In case of diverging opinions during surveys between the Client and the Society's surveyor, the Society may designate another of its surveyors at the request of the Client.

11.2. - Disagreements of a technical nature between the Client and the Society can be submitted by the Society to the advice of its Marine Advisory Committee.

## ARTICLE 12

12.1. - Disputes over the Services carried out by delegation of Governments are assessed within the framework of the applicable agreements with the States, international Conventions and national rules.

12.2. - Disputes arising out of the payment of the Society's invoices by the Client are submitted to the Court of Nanterre, France.

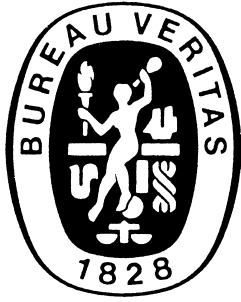
12.3. - **Other disputes over the present General Conditions or over the Services of the Society are exclusively submitted to arbitration, by three arbitrators, in London according to the Arbitration Act 1996 or any statutory modification or re-enactment thereof. The contract between the Society and the Client shall be governed by English law.**

## ARTICLE 13

13.1. - These General Conditions constitute the sole contractual obligations binding together the Society and the Client, to the exclusion of all other representation, statements, terms, conditions whether express or implied. They may be varied in writing by mutual agreement.

13.2. - The invalidity of one or more stipulations of the present General Conditions does not affect the validity of the remaining provisions.

13.3. - The definitions herein take precedence over any definitions serving the same purpose which may appear in other documents issued by the Society.



# RULES FOR INLAND NAVIGATION VESSELS

## Part A Classification and Surveys

### Chapters **1 2 3**

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<b>Chapter 1</b>	<b>CLASSIFICATION</b>
<b>Chapter 2</b>	<b>CLASS DESIGNATION</b>
<b>Chapter 3</b>	<b>SURVEYS</b>

**These Rules enter into force on July 1st, 2009.**

**The English version of these Rules takes precedence over editions in other languages.**

# CHAPTER 1

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Part A  
**Classification and Surveys**

Chapter 1  
**CLASSIFICATION**

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- SECTION 3      SUSPENSION AND WITHDRAWAL OF CLASS**
- SECTION 4      CLASSIFICATION PROCEDURES**



## SECTION 1

## GENERAL PRINCIPLES OF CLASSIFICATION

### 1 Principles of classification

#### 1.1 Purpose of the Rules

**1.1.1** The Rules for classification and surveys of inland navigation vessels cover the classification of inland navigation vessels as defined in [1.2.4].

**1.1.2** The Rules published by the Society give the requirements for the assignment and the maintenance of class for inland navigation vessels.

**1.1.3** Class assigned to a vessel reflects the discretionary opinion of the Society that the vessel, for declared conditions of use and within the relevant time frame, complies with the Rules applicable at the time the service is rendered.

**1.1.4** General Conditions valid at the time of signing of the contract with the Owner or Prospective vessel Owner, the Building Yard or Other Interested party apply.

**1.1.5** The application criteria of the different parts of the present Rules are the following:

- Part A - Classification and Surveys applies to all inland navigation vessels.
- Part B - Hull Design and Construction applies to inland navigation vessels whose hull is of welded steel construction.
- Part C - Machinery, Systems and Electricity applies to all inland navigation vessels.
- Part D - Additional Requirements for Notations applies to specific inland navigation vessel types.

Where necessary, the extent of application is more precisely defined in each chapter of these parts of the Rules.

The classification of vessels other than those dealt with in the above-mentioned Parts B, C and D is covered by specific Rules published by the Society.

**1.1.6** Classification according to these Rules applies primarily to new buildings constructed under survey of the Society. Classification may also be applied to existing vessels by a survey for admission to class/classification after construction, if sufficient documentation is available, see Ch 1, Sec 4, [2].

**1.1.7** The Society's Rules for the classification of inland navigation vessels (see [1.1.5]) will be applied for structural elements of the hull and for components of the machinery and electrical installations of inland navigation vessels, subject to agreement between the Prospective vessel Owner, the Other Interested party and the Building Yard for the classification order to the Society.

#### 1.2 General definitions

**1.2.1** The following general definitions are used in these Rules.

##### 1.2.2 Society

Society means the classification Society with which the vessel is classed.

##### 1.2.3 Society head office

Society head office means the head office or designated head office department in charge of dealing with Rules and classification particulars.

##### 1.2.4 Inland navigation vessel

An inland navigation vessel is a vessel designed and operated for inland navigation and related activities.

##### 1.2.5 Class designation

The class designation consists in:

- the character of classification, i.e. a sequence of abbreviations indicating the extent of compliance with the applicable Rules and the duration of the class period
- notations such as type and service notations, additional class notations as well as range of navigation notations affixed to the character of classification, indicating particular features capability, service restrictions or special equipment and installations, which are included in the classification.

##### 1.2.6 Period of class

Period of class means the period starting either from the date of the initial classification or from the credited date of the last class renewal survey, and expiring at the limit date assigned for the next class renewal survey.

##### 1.2.7 Surveyor

Surveyor means technical staff acting on behalf of the Society to perform tasks in relation to classification and survey duties.

##### 1.2.8 Survey

Survey means an intervention by the Surveyor for assignment or maintenance of class as defined in Part A, Chapter 3, or interventions by the Surveyor within the limits of the tasks delegated by the Administrations.

##### 1.2.9 Administration / Authorities

Administration/Authorities means the Government of the state whose flag the vessel is entitled to fly or the state under whose authority the vessel is operating in the specific case.

##### 1.2.10 Statutory Rules

Statutory Rules are the national and international Rules and Regulations which apply to the vessel but which are not covered by the classification.

### 1.2.11 Other Interested Party

Other Interested Party means other ordering subcontractors, such as the Broker, the Designer, the Engine and components Manufacturer, or the Supplier of parts to be tested, etc.

### 1.2.12 Owner or Prospective vessel Owner

Owner or Prospective vessel Owner means the Registered Owner or the Disponent Owner or the Manager or any other party responsible for the definition, purchase and/or operation of the vessel and having the responsibility to keep the vessel seaworthy, having particular regard to the provisions relating to the maintenance of class laid down in Part A, Chapter 3.

### 1.2.13 Type approval

Type approval means an approval process for verifying compliance with the Rules of a product, a group of products or a system, and considered by the Society as representative of continuous production.

### 1.2.14 Building Yard

The Building Yard is the contractual partner of the Prospective vessel Owner or Other Interested Party, entrusted with managing the design, construction and equipment of the vessel, generally together with a series of subcontractors and manufacturers.

### 1.2.15 Building specification

The building specification is part of the building contract between the Prospective vessel Owner, Other Interested Party and the Building Yard which specifies the technical parameters and all other details for the construction of the vessel.

### 1.2.16 Essential service

Essential service is intended to mean a service necessary for a vessel to proceed at waterway, be steered or manoeuvred, or undertake activities connected with its operation, and for the safety of life, as far as class is concerned.

## 1.3 Meaning of classification, scope and limits

**1.3.1** The Rules, surveys performed, reports, certificates and other documents issued by the Society, are in no way intended to replace or alleviate the duties and responsibilities of other parties, such as Administrations, Designers, Building Yard, Manufacturers, Repairers, Suppliers, Contractors or Subcontractors, actual or Prospective Owners or Operators, Charterers, Brokers, Cargo Owners and Underwriters. The Society cannot therefore assume the obligations arising from these functions, even when the Society is consulted to answer inquiries concerning matters not covered by its Rules, or other documents.

**1.3.2** The activities of such parties which fall outside the scope of the classification as set out in the Rules, such as design, engineering, manufacturing, operating alternatives, choice of type and power of machinery and equipment, number and qualification of crew or operating personnel, lines of the vessel, trim, hull vibrations, spare parts including their number, location and fastening arrangements, life-saving appliances, and maintenance equipment, remain

therefore the responsibility of those parties, even if these matters may be given consideration for classification according to the type and service of vessel or additional class notation assigned.

**1.3.3** The classification-related services and documents performed and issued by the Society do not relieve the parties concerned of their responsibilities or other contractual obligations expressed or implied or of any liability whatsoever, nor do they create any right or claim in relation to the Society with regard to such responsibilities, obligations and liabilities. In particular, the Society does not declare the acceptance or commissioning of a vessel or any part of it, this being the exclusive responsibility of the Owner or Other Interested Party.

**1.3.4** Unless otherwise specified, the Rules do not deal with structures, pressure vessels, machinery and equipment which are not permanently installed and used solely for operational activities such as dredging, heavy load lifting or workshops, except for their effect on the classification-related matters, such as the vessel's general strength.

Note 1: Refer to Ch 1, Sec 2, [6.2] as regards the Owner's responsibility for maintenance and operation of the vessel in relation to the maintenance of class.

**1.3.5** During periods of construction, modification or repair, the vessel is solely under the responsibility of the Builder or the Repair Yard. As an example, the Builder or Repair Yard is to ensure that the construction, modification or repair activities are compatible with the design strength of the vessel and that no permanent deformations are sustained.

**1.3.6** In any case the General Conditions of the Society are applicable.

**1.3.7** Structures, machinery and equipment determining the type of vessel are subject to examination within the scope of classification, in accordance with the character of classification and affixed class notations.

Other systems and components may be included in the classification and/or certification procedure upon request of the Prospective vessel Owner, the Other Interested Party and the Building Yard.

**1.3.8** It is assumed that all parties involved in the planning and design, materials and components production and installation have the professional qualifications required and/or suitable facilities/equipment for fabrication. This will normally be established or confirmed by means of a certified quality assurance management system in accordance with ISO 9000, or equivalent.

## 1.4 Request for services

**1.4.1** Requests for interventions by the Society, such as request for classification, surveys during construction, surveys of vessels in service, tests, etc., are in principle to be submitted in writing and signed by the Other Interested Party, the Owner, the Prospective vessel Owner or the Building Yard. Such request implies that the applicant will abide by all the relevant requirements of the Rules and the General Conditions of the Society.



## 2 Rules

### 2.1 General

#### 2.1.1 Effective date

The effective date of entry into force of any amendments to the Rules is indicated on the inside front page of the Rules or in the relevant Section.

#### 2.1.2 Date of contract for construction

The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the Prospective vessel Owner or the Other Interested Party and the Building Yard. This date is normally to be declared to the Society by the ordering client applying for the assignment of class to a newbuilding, see also Ch 1, Sec 4.

#### 2.1.3 Date of contract for construction of series of sister vessels

The date of "contract for construction" of a series of sister vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the Prospective vessel Owner and the Building Yard.

The optional vessels will be considered part of the same series of sister vessels if the option is exercised not later than one year after the contract to build the series was signed.

**2.1.4** If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract is signed between the Prospective vessel Owner, the Other Interested Party and the Building Yard. The amendment to the contract is to be considered as a "new contract" to which [2.1.2] and [2.1.3] apply.

### 2.2 Application

**2.2.1** In principle, the applicable Rules for assignment of class to a new vessel are those in force at the date of contract for construction.

**2.2.2** Special consideration may be given to applying new or modified rule requirements which entered into force subsequent to the date of the contract for construction, at the discretion of the Society and in the following cases:

- when a justified written request is received from the party applying for classification
- when the keel is not yet laid and more than one year has elapsed since the contract was signed
- where it is intended to use existing previously approved plans for a new contract.

**2.2.3** The above procedures for application of the Rules are, in principle, also applicable to existing vessels in the case of major conversions and, in the case of alterations, to the altered parts of the vessel.

**2.2.4** The rule requirements related to assignment, maintenance and withdrawal of the class of vessels already in operation are applicable from the date of their entry into force.

### 2.3 Equivalence

**2.3.1** The Society may consider the acceptance of alternatives to these Rules, provided that they are deemed to be equivalent to the Rules to the satisfaction to the Society.

**2.3.2** As a rule, materials and equipment type approved in compliance with NR 467 Rules for Steel Ships are considered acceptable within the scope of these Rules for the classification of inland navigation vessels.

### 2.4 Novel features

**2.4.1** The Society may consider the classification of vessels based on or applying novel design principles or features, to which the Rules are not directly applicable, on the basis of experiments, calculations or other supporting information provided to the Society. The specific limitations will then be indicated on the certificate of classification.

### 2.5 Other construction Rules and Regulations

**2.5.1** The appraisal of design and construction particulars by the Society will be exclusively based on Rules and Guidelines agreed upon in the specification of the classification contract between the Prospective vessel Owner, the Other Interested Party or the Building Yard and the Society.

**2.5.2** In addition, statutory construction Rules for inland navigation vessels, such as **ADNR**, may be applied upon agreement with the relevant Authority and if defined in the specification of the classification contract between the Prospective vessel Owner, the Other Interested Party or the Building Yard and the Society.

**2.5.3** The compliance to statutory Regulations of the respective flag state is the responsibility of the Prospective vessel Owner.

### 2.6 Industry Codes, Standards, etc.

**2.6.1** Internationally recognized Standards and Codes published by relevant organisations, national industry organisations or standardisation institutions may be used upon agreement in particular cases as a design and construction basis.

Examples: ISO, IEC, EN, DIN, NF.

## 3 Duties of the Interested Parties

### 3.1 International and national Regulations

**3.1.1** The classification of a vessel does not dispense the Owner, Other Interested Party and Building Yard from compliance with any requirements issued by Administrations.

In the event of disputes, the text of the international and national Rules and Regulations will prevail.

## 3.2 Surveyor's intervention

**3.2.1** Surveyors are to be given free access at all times to vessels which are classed or being classed, Building Yard and manufacturer works, to carry out their interventions within the scope of assignment or maintenance of class, or within the scope of interventions carried out on behalf of Administrations, when so delegated.

Free access is also to be given to experts or/and auditors accompanying the Surveyors of the Society within the scope of the audits as required in pursuance of the Society's internal Quality System or as required by external organizations.

**3.2.2** Owners, Other Interested Parties and Building Yard are to take the necessary measures for the Surveyor's inspections and testing to be carried out safely and efficiently under their full responsibility. Owners, Other Interested Parties and Building Yard - irrespective of the nature of the service provided by the Surveyors of the Society or others acting on its behalf - assume with respect to such Surveyors all the responsibility of an employer for his workforce such as to meet the provisions of applicable legislation. As a rule, the Surveyor is to be constantly accompanied during surveys by personnel of the Owner, Other Interested Party or Building Yards.

**3.2.3** The certificate of classification and/or other documents issued by the Society remain the property of the Society. All certificates and documents necessary to the Surveyor's interventions are to be made available by the Owner, Other Interested Party or Building Yard to the Surveyor on request.

**3.2.4** During the phases of design and construction of the vessel, due consideration should be given to Rule requirements in respect of all necessary arrangements for access to spaces and structures with a view to carrying out class surveys. Arrangements of a special nature are to be brought to the attention of the Society.

## 3.3 Operation and maintenance of vessels

**3.3.1** The classification of a vessel is based on the understanding that the vessel is loaded and operated in a proper manner by competent and qualified crew or operating personnel according to the environmental, loading, operating and other criteria on which classification is based.

**3.3.2** In particular, it will be assumed that the draught of the vessel in operating conditions according to normal prudent conduct will not exceed that corresponding to the freeboard assigned or the maximum approved for the classification, that the vessel will be properly loaded taking into account both its stability and the stresses imposed on its structures and that cargoes will be properly stowed and suitably secured and that the speed and course of the vessel are adapted to the prevailing wave height and weather conditions.

**3.3.3** Any document issued by the Society in relation to its interventions reflects the condition of the vessel as found at the time and within the scope of the survey. It is the Interested Party's responsibility to ensure proper maintenance of the vessel until the next survey required by the Rules. It is the duty of the Interested Party to inform the Surveyor when he boards the vessel of any events or circumstances affecting the class.

## 3.4 Use of measuring equipment and of service suppliers

### 3.4.1 General

Firms providing services on behalf of the Interested Party, such as measurements, tests and servicing of safety systems and equipment, the results of which may form the basis for the Surveyor's decisions, are subject to the acceptance of the Society, as deemed necessary.

The equipment used during tests and inspections in workshops, shipyards and on board vessels, the results of which may form the basis for the Surveyor's decisions, is to be customary for the checks to be performed. Firms are to individually identify and calibrate to a recognised national or international standard each piece of such equipment.

### 3.4.2 Simple measuring equipment

The Surveyor may accept simple measuring equipment (e.g. rulers, tape measures, weld gauges, micrometers) without individual identification or confirmation of calibration, provided it is of standard commercial design, properly maintained and periodically compared with other similar equipment or test pieces.

### 3.4.3 Shipboard measuring equipment

The Surveyor may accept measuring equipment fitted on board a vessel (e.g. pressure, temperature or rpm gauges and meters) and used in examination of shipboard machinery and/or equipment based either on calibration records or comparison of readings with multiple instruments.

### 3.4.4 Other equipment

The Surveyor may request evidence that other equipment (e.g. tensile test machines, ultrasonic thickness measurement equipment, etc) is calibrated to a recognised national or international standard.

## 3.5 Spare parts

**3.5.1** It is the Owner's responsibility to decide whether and which spare parts are to be carried on board.

**3.5.2** As spare parts are outside the scope of classification, the Surveyor will not check that they are kept on board, maintained in a satisfactory condition, or suitably protected and lashed.

However, in the case of repairs or replacement, the spare parts used are to meet the requirements of the Rules as far as practicable.

## **4 Application of statutory requirements by the Society**

### **4.1 International and national Regulations**

**4.1.1** When authorised by the Administration concerned, the Society will act on its behalf within the limits of such authorisation. In this respect, the Society will take into account the relevant requirements, survey the vessel, report and issue or contribute to the issue of the corresponding certificates.

**4.1.2** The above surveys do not fall within the scope of the classification of vessels, even though their scope may overlap in part and may be carried out concurrently with surveys for assignment or maintenance of class.

In the case of a discrepancy between the provisions of the applicable international and national Regulations and those of the Rules, normally, the former take precedence. However, the Society reserves the right to call for the necessary adaptation to preserve the intention of the Rules.

## SECTION 2

## ASSIGNMENT OF CLASS

### 1 General

#### 1.1

**1.1.1** Class is assigned to a vessel upon a survey, with the associated operations, which is held in order to verify whether it is eligible to be classed on the basis of the Rules of the Society, see Ch 1, Sec 1, [1.3.1] and Ch 1, Sec 1, [1.3.2].

This may be achieved through:

- the completion of a new building, during which a survey has been performed
- a survey when the vessel changes class between recognised classification Societies, or
- a specific admission to class survey, in cases where a vessel is classed with a non-recognised classification Society or is not classed at all.

### 2 New building procedure

#### 2.1 Vessel surveyed by the Society during construction

**2.1.1** When a vessel is surveyed by the Society during construction, it is to comply with those requirements of the Rules which are in force and applicable depending on the class of the vessel, taking into account the provisions of Ch 1, Sec 1, [2.1], Ch 1, Sec 1, [2.2] and Ch 1, Sec 1, [2.3].

**2.1.2** The Society:

- reviews/approves the plans and documentation submitted as required by the Rules, see Ch 1, Sec 4
- proceeds, if required, with the appraisal of the design of materials and equipment used in the construction of the vessel and their inspection at works
- carries out surveys or obtains appropriate evidence to satisfy itself that the scantlings and construction meet the Rule requirements in relation to the reviewed/approved drawings
- attends tests and trials provided for in the Rules
- assigns the character of classification, refer to Ch 2, Sec 2.

**2.1.3** The Society defines which materials and equipment used for the construction of vessels built under survey are, as a rule, subject to appraisal of their design and to inspection at works, and according to which particulars.

**2.1.4** As part of his interventions during the vessel's construction, the Surveyor will:

- conduct an overall examination of the parts of the vessel covered by the Rules

- examine the construction methods and procedures when required by the Rules
- check selected items covered by the rule requirements
- attend tests and trials where applicable and deemed necessary.

#### 2.2 Use of materials, machinery, appliances and items

**2.2.1** As a general rule, all materials, machinery, boilers, auxiliary installations, equipment, items, etc. which are covered by the class and used or fitted on board vessels surveyed by the Society during construction are to be new and tested by the Society.

Second hand materials, machinery, appliances and items may be used subject to the specific agreement of the Society and the Owner.

**2.2.2** The requirements for the selection of materials to be used in the construction of the various parts of a vessel, the characteristics of products to be used for such parts and the checks required for their acceptance are to be as stated in other Parts of the Rules or as specified on reviewed/approved plans. In particular, the testing of products manufactured according to quality assurance procedures approved by the Society or judged equivalent by the Society and the approval of such procedures are governed by the requirements of the Society.

#### 2.3 Defects or deficiencies and their repairs

**2.3.1** The Society may, at any time, reject items found to be defective or contrary to Rule requirements or require supplementary inspections and tests and/or modifications, notwithstanding any previous certificates issued.

**2.3.2** All repairs are subject to the preliminary agreement of the Society. When the limits of tolerance for defects are specified in the Rules concerned or by the manufacturer, they are to be taken into account for repairs.

**2.3.3** It is the duty of the Owner, Other Interested Party and Building Yard to notify the Society of any defects or deficiencies noted during the construction of the vessel and/or of any item not complying with the applicable requirements or in any case unsatisfactory.

**2.3.4** Proposals regarding remedial actions intended to be adopted to eliminate such defects or deficiencies are to be submitted to the Society and, if accepted, carried out to the Surveyor's satisfaction.

## 2.4 Equivalence of Rule testing under certain conditions

**2.4.1** Notwithstanding the provisions of [2.1.4], the Society may, at its discretion and subject to conditions and checks deemed appropriate, accept certain materials, appliances or machinery which have not been subjected to Rule testing.

## 3 Vessels under construction

### 3.1 Vessels built under supervision of a recognised classification Society

**3.1.1** In this case, vessels will be admitted to the Society's class upon satisfactory surveys and verification of documentation. For the extent and scope of the surveys to be carried out and the list of documentation to be submitted by the Owner or Other Interested Party, reference is to be made to Ch 1, Sec 4.

Supervision of construction tests and trials to be carried out are based on the completion progress of the vessel and the updated current construction/class status as provided by the previous classification Society.

Admission to class may be conditioned by statutory Regulations. For the documentation to be supplied, see Ch 1, Sec 4, [1.3].

### 3.2 Other vessels

**3.2.1** Other vessels may be accepted on a case by case basis.

## 4 Vessels classed after construction

### 4.1 General

**4.1.1** When an Owner requests to the Society for a vessel already in service to be admitted to class, the order will be processed differently depending on whether the vessel is:

- classed with a recognised classification Society, or
- not classed with a recognised Society.

**4.1.2** Where appropriate within reasonable limits, a proven service record of satisfactory performance during a period of adequate length may be used as a criterion of equivalence. Special consideration will be given to vessels of recent construction.

**4.1.3** For installations or equipment covered by additional class notations, the Society will determine the documentation to be submitted.

**4.1.4** In addition, the Society may base its judgement upon documentation such as certificates issued or accepted by the former classification Society, if any, and statutory certificates issued by the flag Administration or by a recognised organisation on its behalf; moreover, other documents and/or plans may be specifically required to be supplied to the Society in individual cases.

## 4.2 Vessels classed with a recognised classification Society

**4.2.1** In this case, vessels will be admitted to the Society's class upon satisfactory surveys and verification of documentation. For the extent and scope of the surveys to be carried out and the list of documentation to be submitted by the Owner or Other Interested Party, reference is to be made to Ch 1, Sec 4, [2].

**4.2.2** Surveys to be carried out are based on the age of the vessel and the updated current class status of the previous recognised classification Society, as provided by the Owner.

## 4.3 Vessels not classed with a recognised classification Society

**4.3.1** In this case, the class of the vessel will be assigned upon a preliminary review/approval of the documentation listed in Ch 1, Sec 4, [2.1.3] and subsequent satisfactory completion of the surveys.

**4.3.2** The extent and scope of the admission to class survey are to be not less than those required at the class renewal survey of a vessel of the same age and type; in addition, all other periodical surveys should be performed together with those inspections which are linked to specific type and service notations and/or additional class notations and/or special installations the vessel is provided with.

## 5 Date of classification - Definitions

### 5.1 Date of build

**5.1.1** For a new building the date of build is the year and month on which the new construction survey process is completed.

If modifications are carried out, the date of build remains assigned to the vessel. Where a complete replacement or addition of a major portion of the vessel (e.g. forward section, after section, main cargo section) is involved, the following applies:

- the date of build associated with each major portion of the vessel is indicated on the classification certificate
- survey requirements are based on the date of build associated with each major portion of the vessel.

### 5.2 Date of classification for new buildings

**5.2.1** In principle, the initial period of class is assigned from the day on which the new building has been completed and enters in service. Where there is a substantial delay between the completion of the construction survey process and the vessel commencing active service, the date of commissioning may be also specified.

### 5.3 Date of classification for existing vessels

**5.3.1** In principle, for existing vessels the date of classification is the date of completion of the admission to class survey.

## 6 Period and validity of class

### 6.1 Period of class

**6.1.1** The hull, the machinery as well as special equipment and installations classed have, in principle, the same period of class; see also Ch 2, Sec 2, [3].

### 6.2 Prerequisites for validity of class

**6.2.1** The class assigned by the Society is only valid under the provision that the operating conditions are complied with as stated in the class certificate, the operation manual and/or as additionally agreed between the vessel Owner and the Society.

**6.2.2** See also Ch 1, Sec 1, [3.3].

### 6.3 Validity of class

**6.3.1** The class continues to be valid, provided that the hull, machinery as well as special equipment and installations classed are subject to all surveys stipulated, see Part A, Chapter 3 and that any repairs required as a consequence of such a survey are carried out to the satisfaction of the Society.

If some special equipment classed is not subjected to the prescribed surveys or is no longer intended to be carried on board, the notation for that equipment only will be suspended or withdrawn.

**6.3.2** The Society's head office or one of its representations are to be immediately informed about any average, damage or deficiency to the hull, machinery or equipment classed, where these may be of relevance to the vessel's class and safety. A survey will have to be arranged immediately.

If the survey reveals that the vessel's class has been affected, it will be maintained only on condition that the repairs or modifications demanded by the Society are carried out within the period and under the operating conditions specified by the Surveyor. Until full settlement of these demands the class will be restricted.

**6.3.3** Any damage or excessive wastage beyond allowable limits to side shell frames, their end attachments and/or adjacent shell plating, the deck structure and deck plating, the bottom structure and bottom plating, the watertight or oiltight bulkheads and the hatch covers or coamings that affect a vessel's class, is to be permanently repaired immediately.

For locations where adequate repair facilities are not available, consideration may be given to allow a vessel to proceed directly to a Repair Yard. This may require temporary repairs for the intended voyage.

Damages or excessive wastage at the areas noted above and not immediately affecting the vessel's structural or watertight/weathertight integrity may be temporarily repaired for a period to be defined.

**6.3.4** Where defects are found further to an inspection by an Administration in pursuance of Port State Control or similar programmes, Owners are to:

- immediately report the outcome of this inspection to the Society, and
- ask the Society to perform a survey in order to verify the deficiencies, when related to the class of the vessel.

**6.3.5** Apart from the class certificate, any other documentation of significance for classification, such as:

- reports on surveys previously performed
- maintenance schedules to be observed by vessel owner, as agreed with the Society
- reviewed/approved drawings and other documentation handed out to the vessel owner and containing particulars or instructions of significance in respect of the classification requirements, e.g. use of special steel grades

is to be kept on board and made available to the Surveyor on request.

**6.3.6** Systems for special use may be exempted from classification. However, any changes in such systems that may affect the safety of operations and hence validity of the vessel's class, including its classified installations, shall be notified to the Society in due course. This applies particularly to cases, where system changes lead to structural conversions or important changes in the machinery and electrical installation.

**6.3.7** The Society provides a notification system to remind the vessel owner of surveys becoming due, or of any other matters of interest or urgency in connection with the classification of the vessel. However, it remains the responsibility of the vessel Owner to comply with the class conditions and to observe the dates for the prescribed surveys.

### 6.4 Repairs, conversions

**6.4.1** Where parts or components are damaged or worn to such an extent that they no longer comply with the class requirements, they are to be repaired or replaced. The damaged parts shall be made accessible for inspection so that the kind and extent of the damage can be thoroughly examined.

During repairs or maintenance work, the Owner has to arrange so that any damage, defects or non-compliance with the Rule requirements are reported to the Surveyor during his survey.

**6.4.2** Repairs and conversions of the vessel's hull, machinery as well as special equipment and installations classed have to be carried out under the supervision of the Society to ensure compliance with the Rules and continued validity of class. The repair measures are to be agreed with the Surveyor such as to render possible confirmation of the class, without reservations and conditions of class, upon completion of the repairs.

Where necessary, documentation is to be submitted to the Society and/or made available to the attending Surveyor.

Generally, a confirmation of class with recommendations/conditions of class, e.g. in case of temporary repairs, requires to be approved by the Society's head office.

**6.4.3** The areas affected by repairs or conversion shall be treated in the same way as for new buildings. However, experience and technical knowledge gathered since the vessel was built shall be taken into account.

Materials and equipment used for conversions, alterations or repairs are generally to meet the requirements of the Rules for new vessels built under survey; see Ch 1, Sec 4.

**6.4.4** If following major conversions a new character of classification and/or new notations are assigned so that the class certificate has to be reissued, commencement of a new period of class may be agreed upon.

## **6.5 Change of ownership**

**6.5.1** In the case of change of ownership, the vessel retains its current class with the Society provided that:

- the Society is informed of the change in due time and able to carry out any survey deemed appropriate, and
- the new Owner expressly requests to keep the current class, involving acceptance of the Society's General Conditions and Rules. This request covers inter alia the condition of the vessel when changing ownership.

**6.5.2** The vessel's class is maintained without prejudice to those provisions in the Rules which are to be enforced in cases likely to cause suspension or withdrawal of the class such as particular damages or repairs to the vessel of which the Society has not been advised by the former or, as the case may be, new Owner.

## SECTION 3

## SUSPENSION AND WITHDRAWAL OF CLASS

### 1 Discontinuance of class

#### 1.1 General

**1.1.1** The class may be discontinued either temporarily or permanently. In the former case it is referred to as "suspension" of class, in the latter case as "withdrawal" of class. In both these cases, the class is invalidated in all respects.

If for some reason, the class has expired or has been withdrawn or suspended by the Society, this fact may be indicated in the Register.

**1.1.2** If the vessel Owner is not interested in maintenance of class of the vessel or any of its special equipment and installations classed, or if conditions are to be expected under which it will be difficult to maintain class, the Society will have to be informed accordingly. The Society will decide whether the certificate will have to be returned and class suspended or withdrawn. Where only special equipment and installations are concerned, the corresponding notation will be withdrawn and the certificate amended accordingly.

**1.1.3** Class may also be suspended if a vessel is withdrawn from active service for a longer period.

### 2 Suspension of class

#### 2.1 General

**2.1.1** The class may be suspended either automatically or following the decision of the Society. In any event, the vessel will be considered as not retaining its class from the date of suspension until the date when class is reinstated.

**2.1.2** The class may be automatically suspended when one or more of the following circumstances occur:

- when a vessel is not operated in compliance with the Rule requirements, such as in cases of services or conditions not covered by the type and service notation, or trade outside the navigation restrictions for which the class was assigned
- when a vessel proceeds with less freeboard than that assigned, or has the freeboard marks placed on the sides in a position higher than that assigned, or, in cases of vessels where freeboards are not assigned, the draught is greater than that assigned

- when the Owner fails to inform the Society in order to submit the vessel to a survey after defects or damages affecting the class have been detected
- when repairs, alterations or conversions affecting the class are carried out either without requesting the attendance of the Society or not to the satisfaction of the Surveyor.

Suspension of class with respect to the above cases will remain in effect until such time as the cause giving rise to suspension has been removed. Moreover, the Society may require any additional surveys deemed necessary taking into account the condition of the vessel and the cause of the suspension.

**2.1.3** In addition, the class is automatically suspended:

- when the class renewal survey has not been completed by its limit date or within the time granted for the completion of the survey, unless the vessel is under attendance by the Society's Surveyors with a view to completion prior to resuming trading
- when the intermediate survey has not been completed by the end of the corresponding survey time window (see Ch 3, Sec 2).

Suspension of class with respect to the above cases will remain in effect until such time as the class is reinstated once the due items and/or surveys have been dealt with.

**2.1.4** In addition to the circumstances for which automatic suspension may apply, the class of a vessel may also be suspended following the decision of the Society:

- when a condition of class/recommendation is not dealt with within the time limit specified, unless it is postponed before the limit date by agreement with the Society
- when one or more surveys are not held by their limit dates or the dates stipulated by the Society also taking into account any extensions granted in accordance with the provisions of Ch 2, Sec 2, [3]
- when, due to reported defects, the Society considers that a vessel is not entitled to retain its class even on a temporary basis, pending necessary repairs or renewals, etc.
- in other circumstances which the Society will consider on their merits, e.g. in the event of non-payment of fees.

**2.1.5** Suspension of class decided by the Society takes effect from the date when the conditions for suspension of class are met and will remain in effect until such time as the class is reinstated once the due items and/or surveys have been dealt with.



### 3 Withdrawal of class

#### 3.1 General

**3.1.1** The Society will withdraw the class of a vessel in the following cases:

- at the request of the Owner
- when the causes that have given rise to a suspension currently in effect have not been removed within six months after due notification of suspension to the Owner
- when the vessel is reported as a constructive total loss
- when the vessel is lost
- when the vessel is reported scrapped.

Withdrawal of class takes effect from the date on which the circumstances causing such withdrawal occur.

**3.1.2** When the withdrawal of class of a vessel comes into effect, the Society will:

- forward the Owner written notice
- delete the vessel from the Register Book
- notify the flag Administration, if needed
- make the information available to the Underwriters, at their request.

### 4 Withdrawal / suspension of additional class notations

#### 4.1 General

**4.1.1** If the survey requirements related to maintenance of type and service notations of vessels which are assigned more than one type and service notation are not complied

with, the suspension or withdrawal may be limited to the type and service notation concerned.

The same procedure applies to additional class notations.

**4.1.2** The suspension or withdrawal of a type and service notation (where a vessel is assigned with more than one type and service notation) or of an additional class notation generally does not affect the class.

### 5 Reassignment / readmission to class

#### 5.1 General

**5.1.1** At the request of the Owner, a vessel which was previously classed with the Society, subsequently withdrawn from class and has not been classed since that time, may have the class reassigned subject to an admission to class survey. If applicable and appropriate, account may be taken of any periodical surveys held in the former period of class with the Society.

**5.1.2** Where, after suspension or withdrawal of class, the repairs required by the Society have been carried out and the vessel has been subjected to a survey for readmission to class, the original class may be reassigned starting with a new period of class. Such surveys are generally to be carried out in accordance with the requirements for a class renewal survey, Part A, Chapter 3.

**5.1.3** Depending on the duration of the interruption period, parts of the machinery installation may have to be dismantled and river trials or function tests have to be carried out in excess of the requirements mentioned above. For parts and installations replaced or added in the meantime, the scope of examinations and tests to be carried out for admission to class shall be as for newbuildings.

## SECTION 4

## CLASSIFICATION PROCEDURES

### 1 Classification of new building

#### 1.1 Order for classification

**1.1.1** The written order for classification is to be submitted to the Society in triplicate, if needed, by the Building Yard, the Other Interested Party or by the Prospective vessel Owner, using the form provided by the Society. It should be clearly agreed between the parties concerned, e.g. in the building contract, which party will be responsible for compliance with the Society's Rules and Guidelines and other Rules and Regulations to be applied.

**1.1.2** Where orders for the production of components are placed with subcontractors, the Society will have to be advised accordingly indicating the scope of the subcontract. The Building Yard, Prospective Owner and Other Interested Party are responsible for observance of the Rules, Guidelines and Regulations by subcontractors.

**1.1.3** When particulars already approved by the Society for previous inland navigation vessels built under supervision of the Society are incorporated in the design of the new building, this should be specifically stated in the order for classification. Amendments to the construction Rules having been introduced meanwhile shall be taken into account.

#### 1.2 Examination of design and construction particulars

**1.2.1** Particulars/documents for review/approval such as construction plans, calculations, details on materials, type designation of standard equipment, etc. are to be submitted to the Society at least in triplicate, in English or other language agreed upon with the Society in due time prior to commencement of construction/manufacturing.

The particulars submitted shall contain all details required to verify compliance with the construction Rules. The Society reserves the right to request additional information and particulars to be submitted, according to the specific nature of the vessel to be classed.

Design calculations are to be provided, when called for, as supporting documents to the submitted plans.

**1.2.2** After examination by the Society, the documents subject to review/approval will be returned in one copy with a mark/stamp of review/approval. One copy of each document, with remarks related to the compliance with the Rule requirements should the need arise, will be forwarded for verification to the Society's inspection office(s) in charge of construction supervision.

**1.2.3** Any deviations from the review/approved documents e.g. due to requirements of the vessel Owner or alterations suggested by the Building Yard, require to be approved by the Society prior to being realized.

#### 1.3 Documentation

**1.3.1** The design data, calculations and plans to be submitted for review/approval are listed in applicable requirements of Part B, Part C and Part D.

**1.3.2** The documentation submitted to the Society is examined in relation to the class requested in the order for classification.

**1.3.3** Should the Other Interested Party, Building Yard or Prospective Owner subsequently wish to have the class, in particular the type and service notations or additional class notations, granted to the vessel modified, plans and drawings are generally to be re-examined.

**1.3.4** As a rule, modifications of the reviewed/approved plans regarding items covered by classification are to be submitted for review/approval.

**1.3.5** The plans and design data to be submitted to the Society are to incorporate all information necessary for the assessment of the design of the vessel for the purpose of assignment of class. It is the responsibility of the Other Interested Party, Building Yard or Prospective Owner to ascertain that the design data are correct, complete and compatible with the use of the vessel.

**1.3.6** Design data and calculations are to be adequately referenced. It is the duty of the Other Interested Party, Building Yard or Prospective Owner to ascertain that the references used are correct, complete and applicable to the design of the vessel.

**1.3.7** In the case of conflicting information, submitted documentation will be considered in the following order of precedence: design data, plans, design calculations.

**1.3.8** It is the responsibility of the Other Interested Party, Building Yard or Prospective Owner to ascertain that drawings used for the procurement, construction and other works are in accordance with the reviewed/approved plans.

#### 1.4 Supervision of construction and trials

**1.4.1** The Society will assess the production facilities and procedures of the Building Yard, subcontractors and other manufacturers, to determine whether they meet the requirements of the Society's Rules and any additional requirements of the Other Interested Party or Prospective vessel

Owner as agreed in the building specification. This assessment may be connected with a quality assurance certification.

**1.4.2** Materials, components, appliances and installations subject to inspection are to comply with the relevant Rule requirements and are to be presented for inspection by the Society's Surveyors, unless otherwise provided as a result of special arrangements agreed upon with the Society.

It is the duty of the Building Yard, subcontractors and other manufacturers to inform the Society's inspection office in due time about particular surveys to be carried out.

**1.4.3** In order to enable the Surveyor to fulfill his duties, he is to be given free access to the workshops and to the vessel. For performance of the tests required, the Building Yard, subcontractors and other manufacturers are to give the Surveyor any assistance necessary by providing the staff and the equipment needed for such tests which always remain under their full responsibility.

**1.4.4** During the phase of construction of the vessel or installation, the Society will satisfy itself by surveys and inspections that:

- parts for hull, machinery and electrical installations or special equipment subject to review/approval have been constructed in compliance with the reviewed/approved drawings/documents
- all tests and trials stipulated by the Rules for classification and construction are performed satisfactorily
- workmanship is in compliance with current engineering standards and/or the Society's Rule requirements
- welded parts are produced by qualified welders having undergone the tests required by the applicable Rules
- for hull sections or components requiring the Society's approval, certificates have been presented; the Building Yard, subcontractors or other manufacturers will have to ensure that any parts and materials requiring approval will only be delivered and installed, if the appropriate certificates have been issued
- type-tested or type-approved appliances and equipment are used, in accordance with the Rule requirements, where individual certificates are not required.

## 1.5 Tests

**1.5.1** As far as practicable, the machinery including electrical installations as well as special equipment and installations classed will be subjected to operational trials at the manufacturer's premises to the scope specified in the Rules.

Where the machinery, electrical installations or special equipment and installations are of novel design, the Society may require performance of trials under specified conditions.

### 1.5.2 Use of measuring equipment and of service suppliers

Firms providing services on behalf of the Owner, Building Yard or Other Interested Party, such as measurements, tests and servicing of safety systems and equipment, the results

of which may form the basis for the Surveyor's decisions, are subject to the acceptance of the Society, as deemed necessary.

The equipment used during tests and inspections in workshops, Building Yard and on board vessels, the results of which may form the basis for the Surveyor's decisions, is to be customary for the checks to be performed. Such equipment is to be individually identified and calibrated to a recognized national or international standard.

### 1.5.3 Simple measuring equipment

The Surveyor may accept simple measuring equipment (e.g. rulers, tape measures, weld gauges, micrometers) without individual identification or confirmation of calibration, provided it is of standard commercial design, properly maintained and periodically compared with other similar equipment or test pieces.

### 1.5.4 Measuring equipment on board

The Surveyor may accept measuring equipment fitted on board a vessel (e.g. pressure, temperature or rpm gauges and meters) and used in examination of machinery and/or equipment installed on board the vessel based either on calibration records or comparison of readings with multiple instruments.

### 1.5.5 Other equipment

The Surveyor may request evidence that other equipment (e.g. tensile test machines, ultrasonic thickness measurement equipment, etc.) is calibrated to a recognized national or international standard.

## 1.6 Trials on board

**1.6.1** Upon completion of the vessel, all hull, machinery including electrical installations as well as special equipment and installations classed will be subjected to operational trials in the presence of the Surveyor prior to and during the navigation trials. This will include, e.g.:

- tightness, operational and load tests of tanks, anchoring equipment, hatches and hatch covers, shell doors, ramps, etc.
- operational and/or load tests of the machinery, installations and equipment of importance for the operational safety of the vessel.

During a final survey, checks will be made in the presence of the Surveyor to ensure that any deficiencies found, for instance during the navigation trials, have been eliminated.

### 1.6.2 Reports, certificates, documentation

Satisfactory testing of materials, components, machinery, etc. at subcontractor's works will be certified by the Surveyor and/or the local Society's representation.

**1.6.3** Upon satisfactory completion of the construction and the trials on board, the Surveyor will prepare construction and survey reports, on the basis of which the Society will issue the class certificate.

**1.6.4** The classification data of each vessel will be included in the Society's data file. An extract of these vessel data will be indicated in the Register.

## 2 Classification after construction of existing vessels

### 2.1 Admission to class

**2.1.1** Vessels not originally built under supervision of the Society may be classed subsequently following the procedures described in the following.

The vessel's Owner should contact the Society for the necessary arrangements. The Society is to be informed about the previous class status and period, as well as about any conditions of class/recommendations imposed by the previous classification Society. The written order for admission to class of existing vessels or special equipment including the required documents shall be formally addressed to the Society's head office in triplicate, if needed, using the form provided by the Society.

**2.1.2** The following documents updated to present status shall be submitted for examination where applicable. Information shall be provided about any additional Regulations to be observed.

#### 2.1.3 Particulars for hull and machinery

- Particulars of the type and main dimensions of the vessel, building year, building yard, major conversions, if any, freeboard, stability documentation and details of the anchor equipment
- particulars of the type, output and main data, building year and manufacturer of the main engine(s) and of the auxiliary machinery essential for operational safety, the electrical installations, the automatic/remote-control system, the safety arrangements, the steering gear and the windlasses
- general arrangement, capacity plan, hydrostatic and cross curves, loading manual, where required, midship section, longitudinal and transverse sections, transverse bulkheads, decks, shell expansion, engine and boiler foundations, stem and stern frame, rudder and rudder stock, hatch covers
- machinery arrangement and layout, thrust, intermediate and screw shafts, propellers, main engines, propulsion gears and clutch systems, starting-air receivers, auxiliary boilers and related systems, cooling water and lubricating oil systems, bilge and ballast systems, fuel oil and starting-air systems, air and sounding pipe systems, electrical arrangements and wiring diagrams
- steering gear arrangement and piping system and steering gear manufacturer, make and model information
- pumping arrangements at the forward and after ends, drainage of cofferdams and pump rooms and general arrangements of cargo piping in tanks and on decks, for tankers
- torsional vibration calculations of the main shafting system including its branches for propelling installation less than two years old
- instrument and alarm list, fire alarm system, list of automatic safety functions, e.g. slowdowns, etc.

- plans required for vessels to which an additional class notation is assigned
- alternative technical data may be accepted by the Society in lieu of specific items of the listed documentation not available at the time of the transfer of class.

### 2.2 Examination of design and surveys

**2.2.1** The requirements according to [1.2] are applicable in principle. The report on the survey according to [2.3] will be evaluated together with the examination of the particulars and/or drawings to be reviewed/approved.

**2.2.2** Where sufficiently detailed documentation required for review/approval is not available, the necessary information may have to be gathered by an additional survey, possibly including measurements, and/or by additional investigations, computations, etc.

**2.2.3** If the vessels as well as the special equipment and installations classed have the valid class of another recognized classification Society, and if sufficient proof has been furnished regarding the present class status, the Society may dispense with parts of the examination of drawings and computations and may reduce the scope of the survey. However, at least a survey to the scope of an intermediate survey according to Part A, Chapter 3 is to be carried out.

### 2.3 Reports, certificates, documentation

**2.3.1** Upon satisfactory completion of the examinations and surveys mentioned above, a class certificate will be issued and a class period defined.

**2.3.2** Regarding Surveyor's reports and certificates, the provisions of [1.4] apply also to the classification of existing vessels.

**2.3.3** Once a vessel and the relevant equipment have been classed with the Society, the Rules in force for surveys as well as procedures applicable to vessels constructed under supervision of the Society will apply.

## 3 Documentation to be carried on board

### 3.1 General

**3.1.1** To allow quick action in case of surveys, special operation and especially in case of damage, the following documentation must be kept on board and shall be made available to the Surveyor on request:

- class certificate - all survey statements and reports
- stability handbook and loading manual, if required
- description of corrosion protection system, if required
- "as built" drawings and other documentation containing particulars or instructions of significance as far as the Society is concerned, e.g. use of special steel etc.
- list of important testing/monitoring procedures to be followed in connection with validity of class.

Part A  
**Classification and Surveys**

Chapter 2  
**CLASS DESIGNATION**

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- SECTION 1      GENERAL**
- SECTION 2      CHARACTERS OF CLASSIFICATION**
- SECTION 3      CLASSIFICATION NOTATIONS**



# SECTION 1

# GENERAL

## 1 Definitions

### 1.1 General

**1.1.1** The class of an inland navigation vessel complying with the Society's Rules is expressed by the "character of classification", assigned for hull and machinery including electrical installations.

**1.1.2** Details about hull, machinery including electrical installations as well as special equipment and installations included in the classification procedure are indicated by type and service notations and additional class notations affixed to the character of classification, see Ch 2, Sec 2, Tab 1 and Ch 2, Sec 2, Tab 2.

**1.1.3** The character of classification and the notations give the scope according to which the class of the vessel has been based and refer to the specific rule requirements which are to be complied with for their assignment.

In particular, the characters of classification are assigned in relation to compliance with construction rules, maintenance condition and procedure under which the vessel has been surveyed for initial assignment of the class.

The notations are assigned according to the type, service and range of navigation of the vessel and other criteria which have been provided by the Owner, Building Yard or Other Interested Party, when requesting for classification.

**1.1.4** The Society may change the character of classification defined in Ch 2, Sec 2, [2] to Ch 2, Sec 2, [5] or the notations at any time, when the information available shows that the requested or already assigned notations are not suitable for the intended type, service, navigation and any other criteria taken into account for classification.

**1.1.5** The character of classification and notations assigned to a vessel are indicated on the certificate of classification, as well as in the Register of inland navigation vessels published by the Society.

It will be the decision of the Owner, Building Yard or Other Interested Party to have the notations, together with the whole class designation, included in the published Register of the Society or not.

**1.1.6** The character of classification and notations applicable to existing vessels conform to the Rules of the Society in force at the date of assignment of class. However, the character of classification and notations of existing vessels may be updated according to the current Rules, as far as applicable.

**1.1.7** At the request of the Owner and as far as applicable, the Society reserves the right to grant other class notations as defined in other Society's Rules. The class maintenance surveys for such class notations are to be performed to the corresponding requirements in the other Society's Rules.

## 2 Class designation

### 2.1 General

**2.1.1** Tab 1 shows examples of a class designation for hull and machinery of an inland navigation vessel.

**Table 1 : Examples of class designation**

Vessel type	Class designation
General cargo vessel	<b>⚡ II 3 IN(0,6) Z</b> <b>General cargo vessel /</b> <b>Double hull /1R / Heavycargo</b> <b>(Hold, 110 kN/m<sup>2</sup>)</b> <b>• MC</b>
Tanker	<b>⚡ I 5 IN(1,2) Z</b> <b>Tanker / ADNR Type C</b> <b>DP = 57,5kPa / TP = 65kPa</b> <b>⚡ MC</b>
Passenger vessel	<b>⚡ I 5 IN(1,7) (Z)</b> <b>Passenger vessel / Ferry /</b> <b>Fire / With double bottom</b> <b>⚡ MC</b>
Tug	<b>• I 5 IN(2) (-)</b> <b>Tug / AUT-UMS</b> <b>• MC</b>

## SECTION 2

## CHARACTERS OF CLASSIFICATION

### 1 Characters of construction for hull and machinery installations

#### 1.1 Character ☒

**1.1.1** The character ☒ heading the class designation indicates that hull, machinery as well as special equipment and installations included in the classification have been constructed:

- under the survey of and in accordance with the Rules of the Society at the Building Yard and/or at subcontractors supplying construction components/hull sections, as applicable
- with certification by the Society of components and materials requiring inspection subject to the Society's construction Rules.

#### 1.2 Character ☒

**1.2.1** The characters ☒ will be assigned if the vessel has been designed and constructed in accordance with the Rules and under supervision of another recognized classification Society and is subsequently - or at a later date - classed with the Society, see Tab 1.

#### 1.3 Character •

**1.3.1** The character • will be assigned to the relevant part of the vessel, where the procedure for the assignment of classification is other than those detailed in [1.1.1] and [1.2.1], but however deemed acceptable, see Tab 1.

#### 1.4 Character MC

**1.4.1** Under the same conditions, one of the characters defined in [1.1.1], [1.2.1] and [1.3.1] is assigned, followed by the character MC to the classed machinery installation.

#### 1.5 Change of class

**1.5.1** In the event of admission to class (change of class) from a Society or institution which is not recognized, prior examination of drawings and existing certificates of the hull structure, the machinery and electrical installations is conditional.

#### 1.6 Special equipment

**1.6.1** Generally, one of the construction characters above is assigned, under the same conditions and followed by the appropriate character, to any special equipment for which a classification certificate is issued.

### 2 Characters of class and compliance with Rules

#### 2.1 General

**2.1.1** If the vessel's hull is found to comply with the Society's Rules - or another recognized classification Society or other Rules considered to be equivalent, the character of classification will be I.

A lower degree of compliance may be indicated, in exceptional cases, by the character of classification II. In this case, the class may be maintained for shorter class periods or with shorter survey intervals. See Tab 2.

**Table 1 : Characters of construction for hull and machinery**

Component	Character	Rule requirements	Example
Hull	☒	Vessels built under the supervision of the Society and with certification of components and materials in accordance with the Rules.	☒ I 5
	☒	Vessels built under the supervision of another recognized classification Society and which have been assigned a class equivalent to the Society's Rules of classification.	☒ I 5
	•	Vessels built under the supervision of the Society in accordance with the Rules, but , e.g. without inspection by the Society of components and materials which, however, deemed to be acceptable. It is the responsibility of the Building Yard, Owner or Other Interested Party to ascertain that the materials and equipment used in the vessel's construction satisfactorily meet the Rules requirements. Depending on particular conditions or vessel notations, inspection of materials and components by the Society may be required for essential services.	• I 5
	•	In the event of admission to class or classification after construction from a Society or institution which is not recognized.	• I 5
Machinery	☒, etc.	Same characters followed by MC	☒ MC



Table 2 : Characters for compliance with Rules

Character	Description
<b>Characters of class</b>	
These characters indicate the maintenance condition of the vessel's hull in relation to the requirements of the construction Rules.	
<b>I</b>	For vessels found to meet the construction and scantling requirements.
<b>II</b>	For vessels that do not meet in full some construction or scantling requirements, but, however, are deemed acceptable to be entered in the Register of vessels.
<b>Characters of class period (p)</b>	
<b>5</b> <b>3</b>	These characters, following the character of class, indicate the duration of the class period in years.
<b>Equipment character</b>	
<b>Z</b>	Where the vessel's anchors and chain cables meet the applicable requirements of the Rules.
<b>(Z)</b>	The character <b>Z</b> is replaced by <b>(Z)</b> , if the vessel's equipment does not meet the Rule requirements in full, but, however, is deemed acceptable for the intended service.
<b>(-)</b>	Where the Society considers that it is not called upon to form an opinion on the equipment with regard to particular conditions.

### 3 Character of class period

#### 3.1 General

**3.1.1** The character **p** in the characters of classification, indicates the duration of the nominal class period in years. Normally, **p** = 5.

The nominal class period may be extended in compliance with Ch 3, Sec 1, [9.1.1].

The nominal class period can be reduced in exceptional cases and for a limited time, if the vessel does not fully comply with the Rules but has been allowed to operate under restrictions, e.g. regarding the range of navigation and/or weather conditions. See Tab 2.

### 4 Range of navigation character

#### 4.1 General

**4.1.1** The character **IN** indicates a vessel on inland navigation waters.

Inland navigation waters comprise:

- all inland waterways
- all semi-maritime stretches of water up to a significant wave height of 2 m
- other waters showing comparable conditions.

Note 1: The Owner's attention is drawn to the navigation conditions, which on some lakes are very similar to sea navigation conditions. It is up to the Owner to state in each particular case if he wishes that the vessel is assigned an inland navigation notation or one of the navigation notations listed in the Rules for seagoing vessels.

The character **IN** is completed, between brackets, with the significant wave height or maximum wave height for which the vessel has been calculated. See also Ch 2, Sec 3, [10].

### 5 Equipment character

#### 5.1 General

**5.1.1** The character **Z**, placed after the range of navigation, indicates that the vessel's equipment on anchors and chains cables meet the applicable requirements of the Rules.

**5.1.2** Where the vessel's equipment does not meet the Rule requirements, but is deemed by the Society acceptable for the intended service, the character **Z** is replaced by **(Z)**. Reference can be made in the classification certificate to the compliance of the equipment with other Rules such as the Rhine River Rules.

**5.1.3** Where the Society considers that it is not called upon to form an opinion on the anchor equipment, with regard to particular conditions, the character **Z** is replaced by **(-)**.

## SECTION 3 CLASSIFICATION NOTATIONS

### 1 General

#### 1.1

**1.1.1** There are different kinds of notations, such as type and service notations, describing particular features, capabilities, service restrictions or special equipment and installations included in the classification, as defined in the following.

**1.1.2** The notations to be affixed to the character of classification related to the type and service of the vessel are optional and may be elected by the Owner, Building Yard or Other Interested Party. The chosen scope of notations has to be defined in the classification specification as well as in the building specification.

### 2 Notations

#### 2.1 General

**2.1.1** Generally, the notations will be assigned according to the indications or suggestions of the Prospective vessel Owner, Building Yard or Other Interested Party.

**2.1.2** A notation indicating the type and service of the vessel will be added to the class designation, such as:

**General cargo vessel, Tanker**, etc.

**2.1.3** The notations, which have been considered for classification, define the type and service of the vessel according to the request for classification signed by the Prospective Owner, Building Yard or Other Interested Party. The assignment of any notation to a new vessel is subject to compliance with the general rule requirements laid down in Part B, Part C, and Part D of the Rules.

**2.1.4** The notations applicable to existing vessels conform to the Rules of the Society in force at the date of assignment of class. However, the notations of existing vessels may be updated according to the current Rules, as far as applicable, at the request of the Owner or Other Interested Party.

**2.1.5** A notation may be completed by one or more additional class notations, giving further precision regarding the type or service of the vessel, for some of which specific rule requirements are applied.

**2.1.6** The various type and service notations which may be assigned to a vessel are listed in alphabetical order in Tab 1. The additional class notations to the type and service notations are listed in Tab 2.

**2.1.7** Where the intended duties of the vessel include support functions, they may be described by notations which correspond to seagoing vessels or to special type regarding

the hull configuration and/or particular kind of propulsion. Such notations may be assigned instead of or in addition to the notations referred to, when the applicable rule requirements are met, e.g.:

- **HSC** for high speed craft
- **PATROL BOAT**
- **SUPPLY VESSEL**

**2.1.8** The Society reserves the right to grant other type and service notations or additional class notations.

#### 2.1.9 ADN or ADNR

Type and service notations may be completed by the additional class notation **ADN** or **ADNR**, when the vessel's structure and equipment are examined by the Society and found in compliance with the corresponding Regulations. Assigned Class notation **ADN** or **ADNR** is, in no way, intended to replace statutory certificate.

Type and service notations may also be completed by the additional class notation **ADN** or **ADNR**, when corresponding certificate has been issued by the Authorities.

**Table 1 : List of type and service notations**

Type and service notation	Reference for definition in this Section	Applicable rule requirements
<b>Bulk cargo vessel</b>	[3.1.2]	Pt D, Ch 1, Sec 2
<b>Container vessel</b>	[3.1.3]	Pt D, Ch 1, Sec 4
<b>Dredger (1)</b>	[6.1.1]	Pt D, Ch 1, Sec 9
<b>Floating dock</b>	[7.1.5]	NR 475
<b>General cargo vessel</b>	[3.1.1]	Pt D, Ch 1, Sec 1
<b>Hopper barge</b>	[6.1.3]	Pt D, Ch 1, Sec 9
<b>Hopper dredger (1)</b>	[6.1.2]	Pt D, Ch 1, Sec 9
<b>Launch</b>	[7.1.3]	Pt D, Ch 1, Sec 10
<b>Passenger vessel</b>	[5.1.1]	Pt D, Ch 1, Sec 6
<b>Pontoon</b>	[7.1.4]	Pt D, Ch 1, Sec 8
<b>Pusher</b>	[7.1.2]	Pt D, Ch 1, Sec 7
<b>RoRo cargo vessel</b>	[3.1.4]	Pt D, Ch 1, Sec 5
<b>Special service (2)</b>	[8.1.1]	Society's Rules
<b>Split hopper barge</b>	[6.1.4]	Society's Rules
<b>Tanker</b>	[4.1.1]	Pt D, Ch 1, Sec 3
<b>Tug</b>	[7.1.1]	Pt D, Ch 1, Sec 7
<p>(1) This notation may be completed by the type of the dredger, e.g. <b>Hopper suction dredger</b>.</p> <p>(2) This notation may be completed by the type of vessel, e.g. Floating installation. This type of vessel is considered on a case by case basis by the Society, according to its type and service.</p>		

Table 2 : List of additional class notations

Additional class notation	Reference for definition in this Section	Applicable rule requirements
<b>Notations related to type of construction</b>		
<b>Double hull</b>	[9.2.2]	Pt B, Ch 5, Sec 2 and Pt B, Ch 5, Sec 3
<b>With double bottom</b>	[9.2.2]	Pt B, Ch 5, Sec 2
<b>With double sides</b>	[9.2.2]	Pt B, Ch 5, Sec 3
<b>Notations related to hull materials</b>		
<b>HS</b>	[9.2.1]	
<b>AL</b>	[9.2.1]	
<b>C</b>	[9.2.1]	
<b>W</b>	[9.2.1]	
<b>Other notation</b>		
<b>ADN</b>	[2.1.9]	
<b>ADNR</b>	[2.1.9]	
<b>1R</b>	[2.1.10]	
<b>2R</b>	[2.1.11]	
<b>Nonhomload</b>	[2.1.12]	
<b>Ice</b>	[9.3.1]	Pt D, Ch 2, Sec 1
<b>Ind</b>	[9.2.3]	
<b>No propulsion</b>	[9.2.4]	
<b>Intact stability</b>	[9.4.1]	Pt D, Ch 2, Sec 6
<b>Damage stability</b>	[9.4.2]	Pt D, Ch 2, Sec 6
<b>Max. density</b>	[9.2.5]	
<b>Max. t°</b>	[9.2.5]	
<b>AUT-UMS</b>	[9.5.1]	Pt D, Ch 2, Sec 8
<b>DG (1)</b>	[3.2.3]	Pt D, Ch 3, Sec 7
<b>Additional to General cargo vessel</b>		
<b>Heavycargo (AREA<sub>1</sub>, x<sub>1</sub> kN/m<sup>2</sup>)</b>	[3.2.4]	Pt D, Ch 2, Sec 2
<b>Equipped for transport of containers</b>	[3.2.1]	Pt D, Ch 2, Sec 3
<b>Equipped for transport of wheeled vehicles</b>	[3.2.2]	Pt D, Ch 2, Sec 4
<b>Additional to Bulk cargo vessel</b>		
<b>Grabloading</b>	[3.2.6]	Pt D, Ch 2, Sec 10
<b>Heavycargo</b>	[3.2.5]	Pt D, Ch 2, Sec 2
<b>Additional to passenger vessel</b>		
<b>Fire</b>	[5.2.2]	Pt D, Ch 2, Sec 7
<b>Ferry</b>	[5.2.1]	Pt D, Ch 2, Sec 5
<b>Additional to Tanker</b>		
<b>TP = x kPa</b>	[4.2.1]	
<b>DP = x kPa</b>	[4.2.1]	
<b>Type G</b>	[4.2.2]	Pt D, Ch 3, Sec 2
<b>Type C</b>	[4.2.3]	Pt D, Ch 3, Sec 3
<b>Type N closed</b>	[4.2.4]	Pt D, Ch 3, Sec 4
<b>Type N open with flame arresters</b>	[4.2.5]	Pt D, Ch 3, Sec 4
<b>Type N open</b>	[4.2.6]	Pt D, Ch 3, Sec 4
<b>Type N open - Bilgesboat</b>	[4.2.7]	Pt D, Ch 3, Sec 5
<b>Type N open - Bunkerboat</b>	[4.2.8]	Pt D, Ch 3, Sec 6
<b>Additional to Tug / Pusher</b>		
<b>DGL</b>	[7.2.1]	Pt D, Ch 3, Sec 8
<b>DGD</b>	[7.2.2]	Pt D, Ch 3, Sec 9
<b>Notation related to class</b>		
<b>Laid-up</b>		Ch 3, Sec 1, [10]
<b>Annual survey</b>	[9.6]	Pt D, Ch 2, Sec 9
(1) Applies to cargo vessels as defined under [3].		

### 2.1.10 1R

The type and service notation of cargo or spoil carriers will be completed by the additional class notation **1R**, when the vessel's structure is designed for loading and unloading in one run.

### 2.1.11 2R

The type and service notation of cargo or spoil carriers will be completed by the additional class notation **2R**, when the vessel's structure is designed for loading and unloading in two runs.

### 2.1.12 Nonhomload

The type and service notation of cargo or spoil carriers will be completed by the additional class notation **Nonhomload**, when the vessel has been designed in such a way that the cargo spaces may be loaded non-homogeneously, including cases where some holds may be empty, at a draught up to the scantling draught and fulfill the appropriate rule requirements for general strength, and when the corresponding loading conditions are listed in the reviewed/approved loading manual. This additional class notation can be completed with the indication of the different maximum loads allowed in each hold and which holds may be empty, if appropriate.

## 3 Notations for cargo vessels

### 3.1 Type and service notations

#### 3.1.1 General cargo vessel

The type and service notation **General cargo vessel** applies to vessels intended to carry general cargo, dry bulk cargo of density  $\rho_B \leq 1 \text{ t/m}^3$  included, complying with Pt D, Ch 1, Sec 1.

#### 3.1.2 Bulk cargo vessel

The type and service notation **Bulk cargo vessel** applies to vessels intended for the carriage of dry bulk cargo complying with Pt D, Ch 1, Sec 2.

When the maximum cargo density is greater than  $1 \text{ t/m}^3$ , the type and service notation **Bulk cargo vessel** is completed with the indication of the maximum density of the cargo that the vessel is allowed to carry, e.g.:

**Bulk cargo vessel / Max. density 1.8 t/m<sup>3</sup>**

#### 3.1.3 Container vessel

The type and service notation **Container vessel** applies to vessels specially intended for the carriage of containers complying with Pt D, Ch 1, Sec 4.

#### 3.1.4 RoRo cargo vessel

The type and service notation **RoRo cargo vessel** applies to vessels specially intended to carry vehicles, trains and loads on wheeled beds, complying with Pt D, Ch 1, Sec 5.

### 3.2 Additional class notations

#### 3.2.1 Equipped for transport of containers

The type and service notation **General cargo vessel** may be completed with the additional class notation **Equipped for transport of containers**, where the vessel complies with the Rule requirements stated under Pt D, Ch 2, Sec 3.

#### 3.2.2 Equipped for transport of wheeled vehicles

The type and service notation **General cargo vessel** may be completed with the additional class notation **Equipped for transport of wheeled vehicles**, where the vessel complies with the Rule requirements stated under Pt D, Ch 2, Sec 4.

#### 3.2.3 DG

The type and service notation of vessels carrying dry cargoes will be completed by the additional class notation **DG** when the vessel is designed to carry dry dangerous goods in compliance with Pt D, Ch 3, Sec 7 or with the **ADN** or **ADNR** Regulations for this type of vessel.

#### 3.2.4 Heavy cargo (AREA<sub>i</sub>, x<sub>i</sub> kN/m<sup>2</sup>)

The type and service notation **General cargo vessel** will be completed by the additional class notation **Heavycargo (AREA<sub>i</sub>, x<sub>i</sub> kN/m<sup>2</sup>)**, when the double bottom and/or hatch covers and/or other cargo areas designed to support heavy cargoes fulfill the appropriate rule requirements. The value x<sub>i</sub> indicates the maximum allowable local pressure corresponding to zone AREA<sub>i</sub> where the cargo is intended to be stowed. The requirements for the assignment of this additional class notation are given in Pt D, Ch 2, Sec 2, e.g.:

**General cargo vessel / Heavy cargo (Hold, 120 kN/m<sup>2</sup>)**

#### 3.2.5 Heavy cargo

When the maximum density of the cargo that the vessel is allowed to carry is greater than or equal to  $2,5 \text{ t/m}^3$ , the type and service notation **Bulk cargo vessel** will be completed by the additional class notation **Heavycargo** followed by the indication of the maximum allowable cargo density, when the double bottom structure complies with the requirements stated under Pt D, Ch 2, Sec 2, e.g.:

**Bulk cargo vessel / Heavy cargo/ Max. density 4.4 t/m<sup>3</sup>**

#### 3.2.6 Grabloading

The type and service notation **Bulk cargo vessel** may be completed with the additional class notation **Grabloading** if the hold tank is specially reinforced for loading/unloading cargoes by means of grabs or buckets.

The requirements for the assignment of this notation are given in Pt D, Ch 2, Sec 10.

However, this does not preclude vessels not assigned with this notation from being loaded/unloaded with grabs.

## 4 Notations for vessels carrying liquid or gaseous cargo in bulk

### 4.1 Type and service notation

#### 4.1.1 Tanker

The type and service notation **Tanker** applies to vessels specially intended to carry liquid or gaseous cargo in bulk, in compliance with requirements stated under Pt D, Ch 1, Sec 3.

The list of cargoes the tanker is allowed to carry will be issued by the Society, in the case of transport of dangerous goods (see Pt D, Ch 3, Sec 1).

### 4.2 Additional class notations

#### 4.2.1 TP and DP

In addition to the type and service notation **Tanker**, the test pressure **TP** and the design pressure **DP** of the cargo tank, measured at the tank top, expansion trunk or dome excluded and expressed in kPa, are added as additional class notations. These pressures are to be determined according to Pt B, Ch 2, Sec 4, [2.1.1] and first list item of Pt B, Ch 3, Sec 4, [3.1.2] for test pressure and design pressure respectively, taking  $z$  equal to  $z_{TOP}$ .

#### 4.2.2 Type G

**Type G**, applies to a tanker built and equipped for the carriage of gases under pressure or under refrigeration, in compliance either with the applicable rule requirements Pt D, Ch 3, Sec 2 or with the **ADN** or **ADNR** Regulations for this type of vessel.

#### 4.2.3 Type C

**Type C**, applies to a tanker built and equipped for the carriage of liquids, in compliance either with the applicable rule requirements stated under Pt D, Ch 3, Sec 3 or with the **ADN** or **ADNR** Regulations for this type of vessel.

The vessel shall be of the flush deck type (see Pt B, Ch 5, Sec 4, [1.1.1]) and double hull type with double hull spaces, double bottoms, but without trunk.

The cargo tanks may be formed by the vessel's inner hull or may be installed in the hold spaces as independent tanks.

#### 4.2.4 Type N closed

**Type N closed**, applies to a tanker built and equipped for the carriage of liquids, in compliance either with the applicable rule requirements stated under Pt D, Ch 3, Sec 4 or with the **ADN** or **ADNR** Regulations for this type of vessel. See [4.2.8], Note 1.

#### 4.2.5 Type N open with flame arresters

**Type N open with flame arresters**, applies to a tanker built and equipped for the carriage of liquids, in compliance either with the applicable rule requirements stated under Pt D, Ch 3, Sec 4 or with the **ADN** or **ADNR** Regulations for this type of vessel. See [4.2.8], Note 1 in [4.2.8].

#### 4.2.6 Type N open

**Type N open**, applies to a tanker built and equipped for the carriage of liquids, in compliance either with the applicable rule requirements stated under Pt D, Ch 3, Sec 4 or with the **ADN** or **ADNR** Regulations for this type of vessel. See [4.2.8], Note 1 in [4.2.8].

#### 4.2.7 Type N open - Bilgesboat

**Type N open-Bilgesboat**, applies to a tanker with a deadweight of up to 300 tons built and equipped to accept and carry oily and greasy wastes from the operation of vessels, in compliance either with the applicable rule requirements stated under Pt D, Ch 3, Sec 5 or with the **ADN** or **ADNR** Regulations for this type of vessel. See [4.2.8], Note 1 in [4.2.8].

#### 4.2.8 Type N open - Bunkerboat

**Type N open- Bunkerboat**, applies to a tanker with a deadweight of up to 300 tons built and equipped for the carriage and delivery to other vessels of products intended for the operation of vessels, in compliance either with the applicable rule requirements stated under Pt D, Ch 3, Sec 6 or with the **ADN** or **ADNR** Regulations for this type of vessel. See [4.2.8], Note 1.

Note 1: When deemed necessary by the Society the type and service notation of a tanker, the structure of which has been reviewed/approved and built in compliance either with the Rule requirements or with the **ADN** or **ADNR** Regulations, can be added between brackets, as additional notation, to the additional class notation, for information only, when the equipment of the tanker is carried out in accordance to the requirements of the Rules, **ADN** or **ADNR** Regulations for another type of vessel, e.g.:

**ADNR Type N closed (Hull Type C)**

## 5 Notations for vessels carrying passengers

### 5.1 Type and service notation

#### 5.1.1 Passenger vessel

The type and service notation **Passenger vessel**, applies to vessels specially intended to carry passengers complying with the requirements stated under Pt D, Ch 1, Sec 6.

### 5.2 Additional class notation

#### 5.2.1 Ferry

The type and service notation **Passenger vessel**, may be completed by the additional class notation **Ferry**, for vessels specially equipped to load wheeled vehicles, complying with Pt D, Ch 2, Sec 5.

#### 5.2.2 Fire

The additional class notation **Fire** is added to the type and service notation **Passenger vessel** when the vessel's installations comply with the requirements of the Rules stated under Pt D, Ch 2, Sec 7.

## 6 Notations for vessels for dredging activities

### 6.1 Type and service notations

#### 6.1.1 Dredger

The type and service notation **Dredger**, applies to vessels specially equipped only for dredging activities (excluding carrying dredged material), complying with applicable requirements stated under Pt D, Ch 1, Sec 9.

#### 6.1.2 Hopper dredger

The type and service notation **Hopper dredger**, applies to vessels specially equipped for dredging activities and carrying spoils or dredged material, complying with applicable requirements stated under Pt D, Ch 1, Sec 9.

#### 6.1.3 Hopper barge

The type and service notation **Hopper barge**, applies to vessels specially equipped for carrying spoils or dredged material only, complying with applicable requirements stated under Pt D, Ch 1, Sec 9.

#### 6.1.4 Split hopper barge

The type and service notation **Split hopper barge**, applies to vessels specially equipped for carrying spoils or dredged material only, and which open longitudinally around hinges in compliance with the Society's Rules.

## 7 Notations for working units

### 7.1 Type and service notations

#### 7.1.1 Tug

The type and service notation **Tug**, applies to vessels specially equipped for towing, complying with applicable requirements stated under Pt D, Ch 1, Sec 7.

#### 7.1.2 Pusher

The type and service notation **Pusher**, applies to vessels specially equipped for pushing, complying with applicable requirements stated under Pt D, Ch 1, Sec 7.

#### 7.1.3 Launch

The type and service notation **Launch** is assigned to small vessels which are used to provide facilities and assistance for the performance of specified activities, complying with requirements stated under Pt D, Ch 1, Sec 10.

#### 7.1.4 Pontoon

The type and service notation **Pontoon** is assigned to non-propelled units intended to carry cargo and/or equipment on deck only, complying with requirements stated under Pt D, Ch 1, Sec 8.

When a crane is permanently fitted on board, the crane is to be certified and the type and service notation **Pontoon - crane** is granted.

#### 7.1.5 Floating dock

The type and service notation **Floating dock** is assigned to berthed floating units meeting the requirements of NR 475 Floating Dock.

The range of navigation **IN(0,6)** is assigned to these vessels.

### 7.2 Additional class notations for Tug/Pusher

#### 7.2.1 DGL

The type and service notation **Tug** or **Pusher** will be completed by the additional class notation **DGL** when the tug or pusher is part of a pushed convoy or a side-by-side formation comprising a tank vessel carrying dangerous substances and complies with the requirements stated under Pt D, Ch 3, Sec 8 or with the **ADN** or **ADNR** Regulations for this type of vessel.

#### 7.2.2 DGD

The type and service notation **Tug** or **Pusher** will be completed by the additional class notation **DGD** when the tug or pusher is part of a pushed convoy or a side-by-side formation comprising a cargo vessel carrying dangerous substances and complies with the requirements stated under Pt D, Ch 3, Sec 9 or with the **ADN** or **ADNR** Regulations for this type of vessel.

## 8 Notations for miscellaneous units

### 8.1 Type and service notations

#### 8.1.1 Special service

The type and service notation **Special service** is assigned to vessels which, due to the peculiar characteristics of their activity, are not covered by any of the type and service notations mentioned above. The classification requirements of such units are considered by the Society on a case by case basis.

This type and service notation may apply, for instance, to vessels engaged in research, expeditions and survey, vessels for training of personnel and other vessels with design features and modes of operation which may be referred to the same group of vessels.

An additional service notation may be specified after the type and service notation, e.g. **Floating installation**, to identify the particular service in which the unit is intended to trade. The scope of classification of such units is indicated into the certificate of classification.

## 9 Other additional class notations

### 9.1 General

**9.1.1** Other additional class notations express the classification of additional equipment or specific arrangement, which has been requested by the Owner, Other Interested Party or Building Yard.

**9.1.2** The assignment of these additional class notations is subject to the compliance with applicable additional Rule requirements.

## 9.2 Special considerations for hull structures

### 9.2.1 Materials

If vessels are constructed of normal strength hull structural steel, this will not be specially indicated. If other materials are employed for the hull, this will be indicated in the notations in the class certificate, e.g.:

- **HS** for Higher Strength hull structural steel
- **AL** for ALuminium
- **C** for Composite materials such as FRP
- **W** for Wood.

### 9.2.2 Type of construction

Based on the different types of construction of the hull of each vessel or unit, the following additional notations are added to the type and service notation:

- **Double hull**, to vessels and units fitted with inner bottom and inner sides contributing to the hull girder strength and complying with applicable rule requirements.

Convenient accesses to all double bottom and side tank spaces are to be provided for inspection.

- **With double bottom**, to vessels and units fitted with inner bottom contributing to the hull girder strength and complying with applicable rule requirements.

Convenient accesses to all double bottom spaces are to be provided for inspection.

- **With double sides**, to vessels and units fitted with inner sides contributing to the hull girder strength and complying with applicable rule requirements.

Convenient accesses to all side tank spaces are to be provided for inspection.

### 9.2.3 Independent cargo tank

A vessel carrying substances in independent cargo tanks which meet the requirements of the Rules, in particular those concerning parallelepipedic cargo tanks, or cylindrical pressure tanks, will be assigned the notation **Ind** placed after the type and service notation.

### 9.2.4 No propulsion

Each non-propelled vessel or unit will be assigned the additional class notation **No propulsion**, added to its type and service notation, e.g. **Dredger /No propulsion**.

### 9.2.5 Max. density - Max. t°

When applicable, the maximum allowed density, **MAX. density** and/or temperature, **MAX. t°** of the cargo carried may be added to the type and service notation as an additional class notation.

## 9.3 Navigation in ice

### 9.3.1 Ice

The additional class notation **Ice** is assigned to vessels the hull and machinery installation of which are designed such as to comply with the Rules requirements for navigation in drift ice in compliance with applicable requirements stated under Pt D, Ch 2, Sec 1.

## 9.4 Stability notations

### 9.4.1 Intact stability

The additional class notation **Intact stability** can be assigned to a vessel for which an intact stability file has been examined by the society and found to satisfy specific requirements of Pt D, Ch 2, Sec 6.

The certificate/attestation issued specifies the criteria considered for this examination and is to be annexed to the classification certificate. The intact stability file is to be available on board.

### 9.4.2 Damage stability

The additional class notation **Damage stability** can be assigned to vessels for which the intact stability and the damage buoyancy file have been examined by the Society and found to satisfy specific requirements of Pt D, Ch 2, Sec 6.

The certificate/attestation issued specifies the criteria considered for this examination and is to be annexed to the classification certificate. The damage buoyancy and stability file is to be available on board.

**9.4.3** The certificates/attestations issued for intact stability and damage stability remain valid unless:

- the relevant structure, equipment or installations of the vessel are modified or not kept in a satisfactory condition of maintenance and operation
- the conditions of operation of the vessel differ from those taken into consideration for the examination
- the proper applicable documentation examined by the Society is not available on board
- the classification certificate is not valid.

## 9.5 Unattended machinery spaces (AUT-UMS)

**9.5.1** The additional class notation **AUT-UMS** is assigned to vessels which are fitted with automated installations enabling machinery spaces to remain periodically unattended in all sailing conditions including manoeuvring, complying with requirements stated under Pt D, Ch 2, Sec 8.

## 9.6 Annual survey

**9.6.1** The additional class notation **Annual survey** is assigned to vessels for which surveys for the maintenance of class include the annual survey performed in compliance with Pt D, Ch 2, Sec 9.

## 9.7 Miscellaneous additional class notations

**9.7.1** When the vessel's hull or essential parts have been constructed in accordance with a design, for which sufficient experience is not available, the Society may also define other notations by means of provisional requirements and guidelines, which may then be published in the form of tentative rules. The Society will decide at what intervals the required periodical surveys will have to be carried out.

**9.7.2** Procedures as developed by IMO such as LLC 66/68 and other Codes for seagoing ships may be adopted, as far as practicable, if no equivalent Regulations are available.

## 10 Range of navigation

### 10.1 General

**10.1.1** The assignment of this notation does not absolve the Owner or Other Interested Party from compliance with any international and national Regulations established by the Administrations for a vessel operating in national waters, or a specific area, or a navigation zone. Neither does it waive the requirements in Ch 1, Sec 1, [3.3].

**10.1.2** The range of navigation which the Society assigns upon examination of plans or any other equivalent procedure does not entirely determine the actual capability of a vessel to operate in a specific area; this capability being dependent on other factors which are not considered in the Rules. Consequently, no comparison should be made between a range of navigation assigned by the Society and a navigation zone or category as defined by national or international Regulations.

For vessels trading in defined river systems or waters only, deviations from the Rule requirements for the equipment may be either admitted or required by the Authorities.

In such cases, the range of navigation character will be supplemented by indication of the respective area or river system, e.g. Danube or Amazon.

### 10.2 Range of navigation IN(0)

**10.2.1** The range of navigation **IN(0)** is assigned to a vessel having a structure with scantlings deemed suitable to navigate on still and smooth stretches of water.

### 10.3 Range of navigation IN(0,6)

**10.3.1** The range of navigation **IN(0,6)** is assigned to a vessel having a structure with scantlings deemed suitable to navigate on stretches of water where there may be strong currents and a certain roughness of the surface on which a maximum wave height of 0,6 m can develop.

### 10.4 Range of navigation $IN(1,2 \leq x \leq 2)$

**10.4.1** The range of navigation **IN(1,2 ≤ x ≤ 2)** is assigned to a vessel having a structure with scantlings deemed suitable to navigate on semi-maritime stretches of water or lakes on which a maximum significant wave height  $x$ , between 1,2 m and 2,0 m, can develop.



Part A  
**Classification and Surveys**

Chapter 3  
**SURVEYS**

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- SECTION 1      MAINTENANCE OF CLASS**
- SECTION 2      INTERMEDIATE SURVEYS**
- SECTION 3      CLASS RENEWAL SURVEYS**
- SECTION 4      NON-PERIODICAL SURVEYS**
- SECTION 5      BOTTOM SURVEYS**
- SECTION 6      INSTALLATIONS UNDER PRESSURE**
- SECTION 7      PERFORMANCE AND SCOPE OF  
                         THICKNESS MEASUREMENTS**



## SECTION 1

## MAINTENANCE OF CLASS

### 1 General principles of surveys

#### 1.1 Survey types

**1.1.1** Classed vessels are submitted to surveys for the maintenance of class. These surveys include the class renewal survey, intermediate and eventual annual survey, bottom survey (either survey in dry condition or in-water survey), propeller shaft survey, boiler survey, and surveys for the maintenance of additional class notations, where applicable. Such surveys are carried out at the intervals and under the conditions laid down in this Chapter.

**1.1.2** The different types of periodical surveys are summarized in Tab 1. The intervals at which the periodical surveys are carried out are given in the items referred to in the second column of Tab 1. The relevant extent and scope are given in Ch 3, Sec 2 to Ch 3, Sec 7 for all vessels.

Where there are no specific survey requirements for additional class notations assigned to a vessel, equipment and/or arrangements related to these additional class notations are to be examined, as applicable, to the Surveyor's satisfaction at each class intermediate or renewal survey for the class.

The surveys are to be carried out in accordance with the relevant requirements in order to confirm that the hull, machinery, equipment and appliances comply with the applicable Rules and will remain in satisfactory condition based on the understanding and assumptions mentioned in Ch 1, Sec 2, [6.2].

**Table 1 : List of periodical surveys**

Type of survey	Reference to scope of survey
Class renewal - hull	Ch 3, Sec 3, [2] and Ch 3, Sec 7 <b>(1)</b>
Class renewal - machinery	Ch 3, Sec 3, [3] <b>(1)</b>
Intermediate - hull	Ch 3, Sec 2, [3] <b>(1)</b>
Intermediate - machinery	Ch 3, Sec 2, [4] <b>(1)</b>
Bottom	Ch 3, Sec 5
Propeller shaft	Ch 3, Sec 3, [4] and Ch 3, Sec 3, [5]
Installations under pressure	Ch 3, Sec 6
<b>(1)</b> As applicable, according to the service notation assigned to the vessel.	

Where the conditions for the maintenance of type and service notations and additional class notations are not complied with, the type and service notation and/or the additional class notations as appropriate will be suspended and/or withdrawn in accordance with the applicable Rule requirements given in Ch 1, Sec 3.

It is understood that requirements for surveys apply to those items that are required according to the Rules.

**1.1.3** Unless specified otherwise, any survey other than bottom survey and propeller shaft survey may be effected by carrying out partial surveys at different times to be agreed upon with the Society, provided that each partial survey is adequately extensive. The splitting of a survey into partial surveys is to be such as not to impair its effectiveness.

**1.1.4** In addition to the above periodical surveys, vessels are to be submitted to non-periodical surveys such as occasional surveys whenever the circumstances so require, refer to Ch 3, Sec 4.

Occasional surveys are carried out at the time of, for example:

- updating of classification documents, e.g. change of the Owner, name of the vessel, flag
- damage or suspected damage
- repair or replacement work
- alterations or conversion
- extraordinary surveys as parts of the Society's quality assurance system
- postponement of surveys or of conditions of class/recommendations.

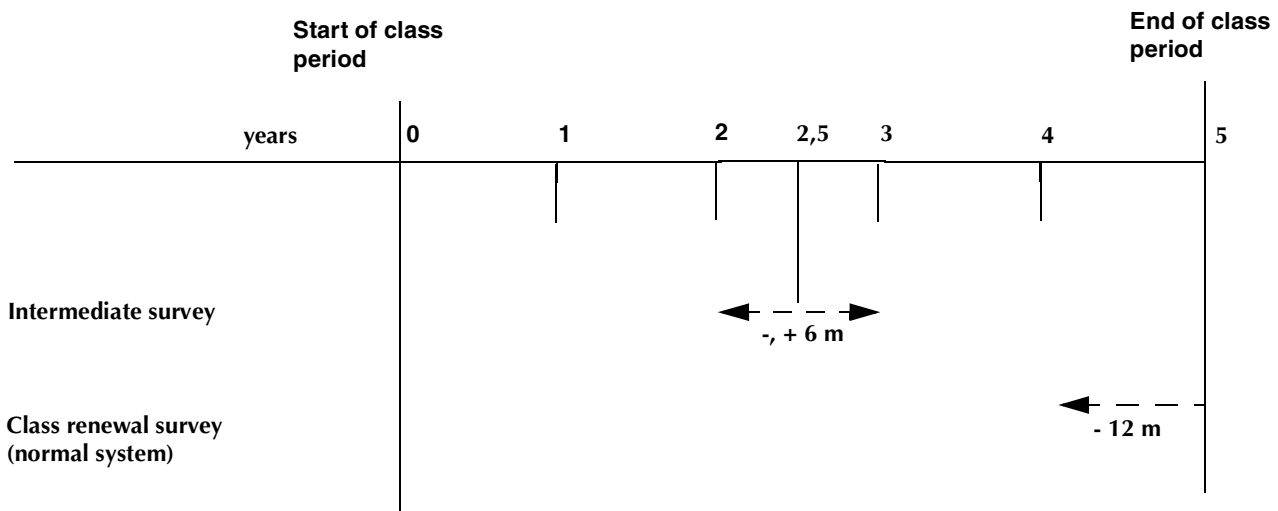
**1.1.5** The Society may require a vessel to be submitted to an annual survey, depending on:

- its type and service notation
- its range of navigation and frequency of operations in semi-maritime stretches of water or lakes, and
- its age.

#### 1.2 Links between anniversary dates and intermediate surveys and class renewal surveys

**1.2.1** The link between the anniversary dates, the class renewal survey (when carried out according to the normal system), and the intermediate surveys is given in Fig 1, considering class period  $p = 5$ .

Figure 1 : Links between anniversary dates and intermediate surveys and class renewal surveys



### 1.3 Change of periodicity, postponement or advance of surveys

**1.3.1** The Society reserves the right, after due consideration, to change the periodicity, postpone or advance surveys, taking into account particular circumstances.

When a survey becomes due, the following applies:

- In the case of a class renewal survey, the Society may grant an extension provided there is documented agreement to such an extension and class extension surveys are performed prior to the expiry date of the class certificate, and the Society is satisfied that there is justification for such an extension.
- In the case of intermediate surveys, no postponement is granted. The survey is to be completed within their prescribed windows.
- In the case of all other periodical surveys and conditions of class/recommendations, extension or postponement may be granted, provided there is sufficient technical justification for such an extension or postponement.

### 1.4 Extension of scope of survey

**1.4.1** The Society may extend the scope of the provisions in Ch 3, Sec 2 to Ch 3, Sec 7, which set forth the technical requirements for surveys, whenever and so far as considered necessary, or modify them in the case of special vessels or systems.

**1.4.2** The extent of any survey also depends upon the condition of the vessel and its equipment. Should the Surveyor have serious doubts as to the maintenance or condition of the vessel or its equipment, or be advised of any deficiency or damage which may affect the class, then further examination and testing may be conducted as considered necessary.

### 1.5 General procedure of survey

**1.5.1** The general procedure of survey consists in:

- an overall examination of the parts of the vessel covered by the Rule requirements
- at random checking of selected items covered by the Rule requirements
- attending tests and trials where applicable and deemed necessary by the Surveyor.

**1.5.2** When a survey results in the identification of significant corrosion, structural defects or damage to hull, machinery and/or any piece of its equipment which, in the opinion of the Surveyor, affect the vessel's class, remedial measures may be required to be implemented before the vessel continues in service.

**1.5.3** The Society's survey requirements cannot be considered as a substitute for specification and acceptance of repairs and maintenance, which remain the responsibility of the Owner.

## 2 Definitions and procedures related to surveys

### 2.1 Definitions

#### 2.1.1 Period of class

Period of class means the period starting either from the date of the initial classification or from the credited date of the last class renewal survey, and expiring at the limit date assigned for the next class renewal survey.

#### 2.1.2 Anniversary date

Anniversary date means the day of the month of each year in the period of class which corresponds to the expiry date of the period of class.

### 2.1.3 Survey time window

Survey time window, or more simply window, mean the fixed period during which annual and intermediate surveys are to be carried out.

### 2.1.4 Overdue surveys

Each periodical survey is assigned a limit date specified by the relevant requirements of the Rules (end of survey interval or end date of window) by which it is to be completed.

A survey becomes overdue when it has not been completed by its limit date.

### 2.1.5 Conditions of class/recommendations

Any defect and/or deficiency affecting the class, and which has to be dealt with within a limited period of time is indicated as a condition of class/recommendation. A condition of class/recommendation is pending until it is settled. Where it is not settled by its limit date, the condition of class/recommendation is overdue.

### 2.1.6 Memoranda

Any information deemed noteworthy for the Society's convenience as well as defects and/or deficiencies which do not affect the class or the maintenance of class, are to be indicated as memoranda. Memoranda are not to be regarded as conditions of class/recommendations.

## 2.2 Preparations and conditions for surveys

**2.2.1** Surveys required for maintenance of class, e.g. in the case of repairs of, or modifications to any parts subject to classification, are to be agreed with the Society's head office or the local Society representations in due time, so that the measures envisaged may be assessed and supervised as required.

**2.2.2** The Surveyors are to be given access at any time to the vessel and/or to the workshops, so that they may perform their duties. The Owner is to provide the necessary facilities for the safe execution of the surveys.

For their internal examination, tanks and spaces are to be safe for access, i.e. cleared, cleaned, gas freed, ventilated, etc.

For survey of the vessel's internal structure including close up survey, means are to be provided to enable the Surveyor to examine the structure in a safe and practical way.

Tanks and spaces are to be sufficiently illuminated, clean and free from water, scale, dirt, oil residues, etc. to reveal significant corrosion, deformation, fractures, damage or other structural deterioration.

Adapted rescue and safety equipment is to be available.

In this connection all areas to be surveyed have to be cleared, cleaned and are to be made gas-free, as deemed necessary by the Surveyor.

The class certificate and other documents related to classification and carried on board are to be made available to the Surveyor.

**2.2.3** The Society will inform the Owner about the status of class, indicating the last recognized surveys and the next due dates. However in principle it remains the responsibility of the Owner to comply with the class conditions and to observe the dates for the prescribed surveys.

**2.2.4** Upon request the Society may agree to testing, monitoring and analysis procedures as a supplement to or equivalent substitute for conventional survey methods.

**2.2.5** The Society reserves the right to extend the scope of a survey and/or inspection for given reasons, e.g. in case of suspected damage or other negative experience gained, possibly on board of similar vessels or vessels with similar components.

Likewise, the Society reserves the right to demand surveys to be held between the due dates of regular periodical surveys.

## 3 Selection of Surveyors

### 3.1 General

**3.1.1** On principle, the acting Surveyors will be chosen by the Society. However, the Owner is free to have any findings of surveys and decisions resulting there from, which deem to be doubtful, checked by other Society's Surveyors upon special request to head office.

## 4 Documentation of surveys, confirmation of class

### 4.1 General

**4.1.1** The records of each survey, as well as any requirements upon which maintenance of class has been made conditional, will be entered into the respective survey statement/certificate.

By his signature in the certificate and other documents the Surveyor certifies what he himself has seen and checked during the particular survey.

**4.1.2** In the Register the dates of the surveys will be indicated.

**4.1.3** On request, the class status may be confirmed in writing by a separate certificate/attestation issued by the Society.

**4.1.4** Where defects are repaired provisionally only, or where the Surveyor does not consider immediate repair or replacement necessary, the vessel's class may be confirmed for a limited period. Cancellation of such limitations will have to be indicated in the survey statement/certificate.

## 4.2 Validity of certificates/attestations

**4.2.1** If for some reason a vessel's class has expired or has been withdrawn by the Society, all certificates/attestations issued by the Society will automatically become void. If subsequently the class is renewed or reassigned, the validity of these certificates/attestations may be revived within the scope of their original period of validity, provided that all surveys meanwhile having fallen due have been carried out to the satisfaction of the Surveyor.

## 4.3 Endorsement of Certificate of Classification

### 4.3.1 Text of endorsement

When surveys are satisfactorily carried out, the certificate of classification is generally endorsed accordingly, with the relevant entries in the appropriate annexes.

Each endorsement normally consists of sections for the description of:

- the surveys held
- the imposed, deleted and postponed conditions of class/recommendations (including the assigned limit date as applicable)
- the unchanged existing conditions of class/recommendations (given for information only).

Where applicable, memoranda are also endorsed in the appropriate annex.

### 4.3.2 Possible modifications to endorsements

The Society reserves the right to modify the endorsements made by Surveyors.

## 5 Surveys in accordance with flag state Regulations

### 5.1 General

**5.1.1** All activities outlined in [5.2] and, where applicable, issuance of relevant certificates/attestations are likewise subject to the respective latest edition of Society's General Conditions.

### 5.2 Society's intervention

**5.2.1** Where surveys are requested by the Owner on account of international conventions and/or of corresponding laws and Regulations of a flag state, the Society will carry them out by order or within the framework of official order, acting on behalf of the Authorities concerned, based on the respective provisions. This includes surveys according to e.g. ADN/ADNR Regulations, Rhine Rules, European Directive, etc.

Where possible, such surveys will be carried out simultaneously with the class surveys.

## 6 External service suppliers

### 6.1 General

**6.1.1** Personnel or firms engaged in services affecting classification and statutory work are subject to approval by the Society.

The inspection, measuring and test equipment used in workshops, Building Yards and on board vessels, which may form the basis for Surveyor's decisions affecting classification or statutory work, shall be appropriate for the services to be performed. The firms shall individually identify and calibrate each unit of such equipment to a recognized national or international standard.

## 7 Periodical surveys

### 7.1 General

**7.1.1** The periodical surveys listed in the following are to be conducted for the hull, machinery including electrical installations as well as special equipment and installations included in the classification of the inland navigation vessel.

If for some obvious reason, e.g. a temporary out-of-service condition of certain equipment, parts included in the classification cannot be surveyed, this will be noted in the survey statement/certificate.

**7.1.2** Where flag state Regulations are applicable which impose inspection intervals deviating from the class related intervals, the intervals will be harmonized in the individual case to reduce the number of single surveys, where possible.

**7.1.3** In principle elements covered by the classification and submitted to a class renewal survey on a date different from the date of the periodical class renewal survey of the vessel, are to be re-examined p years after the previous survey.

## 8 Surveys relative to class notations from other Society's Rules

### 8.1 General

**8.1.1** The surveys requested for granting of class notations defined in Society's Rules but not in inland navigation Rules have to be performed according to corresponding requirements for maintenance of class.

## 9 Class extension surveys

### 9.1 General

**9.1.1** On Owner's special request and following surveys of hull and machinery including shaft arrangement afloat, the Society may extend the class by no more than 12 months in total, provided that the surveys in the scope of an intermediate survey at least, show that hull and machinery including electrical installations are in unobjectionable condition.

## 10 Lay-up and recommissioning of laid-up vessels

### 10.1 General principles

**10.1.1** The period of class of hull and machinery will not be interrupted throughout the lay-up period. This means that periodical and non-periodical surveys will have to be carried out as before; surveys due, for which dry-docking is required, may be postponed until recommissioning.

**10.1.2** Upon expiry of the class, a survey substituting the class renewal survey will have to be performed. An entry on the class renewal will be made in the class certificate, with the notation **Laid-up** and indicated in the Register.

**10.1.3** A vessel put out of commission may be subject to specific requirements for maintenance of class, as specified below, provided that the Owner notifies the Society of the fact.

**10.1.4** If the Owner does not notify the Society of the lay-up of the vessel or does not implement the lay-up maintenance program, the vessel's class will be suspended and/or withdrawn when the due surveys are not carried out by their limit dates in accordance with the applicable requirements of this Chapter.

**10.1.5** The lay-up maintenance program provides for a "lay-up survey" to be performed at the beginning of lay-up and subsequent "lay-up condition surveys" which are required to be carried out as long as the vessel remains laid-up. The minimum content of the lay-up maintenance program as well as the scope of these surveys are to be agreed with the Society. The other periodical surveys which become overdue during the lay-up period may be postponed until the recommissioning of the vessel.

**10.1.6** Where the vessel has an approved lay-up maintenance program and its period of class expires, the period of class is extended until it is recommissioned, subject to the satisfactory completion of the lay-up condition surveys as described in [10.1.5].

**10.1.7** The periodical surveys carried out during the lay-up period may be credited, either wholly or in part, at the discretion of the Society, having particular regard to their extent and dates. These surveys will be taken into account for the determination of the extent of surveys required for the recommissioning of the vessel and/or the expiry dates of the next periodical surveys of the same type.

**10.1.8** When a vessel is recommissioned, the Owner is to notify the Society and make provisions for the vessel to be submitted to the following surveys:

- a survey prior to recommissioning, the scope of which depends on the duration of the lay-up period. Depending on the duration of the lay-up period, a river trial and/or recommissioning trials of specific installations and/or components will have to be carried out
- all periodical surveys which have been postponed in accordance with [10.1.2], taking into account the provisions of [10.1.4].

**10.1.9** Where the previous period of class expired before the recommissioning and was extended as stated in [10.1.6], in addition to the provisions of [10.1.5] a complete class renewal survey is to be carried out prior to recommissioning. Items which have been surveyed in compliance with the class renewal survey requirements during the 12 months preceding the recommissioning may be credited. A new period of class is assigned from the completion of the class renewal survey.

## SECTION 2

## INTERMEDIATE SURVEYS

### 1 General

#### 1.1

**1.1.1** The intermediate survey falls due at half the nominal time interval between two class renewal Surveys, i.e. every  $p/2$  years.

The survey has to be carried out within a time interval of 6 months before to 6 months after the date corresponding to  $p/2$ .

### 2 Surveys performance

#### 2.1 General

**2.1.1** Intermediate surveys shall include all the inspections and checks required for eventual annual surveys. Additionally, the requirements stated under [3] to [5] shall be observed.

Note 1: More extensive Regulations of the country, where the vessel is registered, are to be observed.

**2.1.2** These requirements apply to inland navigation vessels in general. Additional requirements may have to be observed for particular vessel types, due to request of the Owner or in connection with manufacturer's recommendations for special equipment.

### 3 Hull and hull equipment

#### 3.1 General

**3.1.1** The main structural elements of the hull are to be subjected to a general visual inspection, as far as accessible. If applicable, ballast tank, storage and engine rooms are to be surveyed at random, depending on the vessel type and the age and general condition of the vessel. Where damages or excessive wastage affecting the class are suspected, the Surveyor is entitled to carry out further investigations as well as thickness measurements, if required.

**3.1.2** The rudder and manoeuvring arrangement and the anchor equipment are to be checked for visible damages. For the related machinery and for operability, see [4.1.1].

**3.1.3** The foundations and their substructure of special equipment, particularly on the upper deck, shall be inspected for damages.

**3.1.4** Compartments and rooms normally not accessible, or accessible only after special preparations, may be required to be opened for inspection, depending on the vessel's age and available information about service conditions.

#### 3.2 Ballast tanks

**3.2.1** Depending on the vessel's age, the Surveyor may require opening of ballast tanks for visual inspection, particularly if deterioration of the coating or excessive wastage has already been observed at previous surveys.

If the coating in such ballast tanks is found to be in poor condition (see Ch 3, Sec 7, [2.9.1]), maintenance of class is to be subject to the tanks in question being examined at annual intervals, and thickness measurements carried out as considered necessary.

If coating is to be partly or totally renewed, only approved coating is applicable in case of a repair. The whole working procedure including the surface preparation has to be documented.

#### 3.3 Hatches and covers, bow, side and stern doors

**3.3.1** Hatches and covers, bulkhead and hull doors, ramps and any openings in the outer shell shall be surveyed regarding structural integrity as well as tightness and operability of all closures.

**3.3.2** Additionally to the overall survey the following structural members of bow, side and stern doors are to be thoroughly inspected:

- all hinges and the pertinent hydraulic cylinders in way of their securing points
- all securing elements of the locking devices and stoppers.

**3.3.3** Where considered necessary by the Surveyor, additionally crack tests shall be carried out at structural members of bow, side and stern doors.

Essentially, the crack tests will cover:

- main joining welds and their interfacial areas both on the vessel's hull and on the doors
- highly stressed areas in way of the centres of rotation of the hinges
- highly stressed areas of the locking devices and their stoppers
- repair welding.

For crack detection the dye penetration method or the magnetic particle inspection method shall be employed, and a test protocol is to be prepared.



### 3.4 Dry dock survey

**3.4.1** Intermediate surveys have to be carried out in dry-dock in the following cases:

- the vessel's shell is riveted, at the Surveyor's discretion
- the vessel's age exceeds 20 years, at the Surveyor's discretion
- the vessel's age exceeds 20 years and the service notation granted is tanker for transport of dangerous goods
- the vessel is granted with the range of navigation **IN(x)**,  $1,2 \leq x \leq 2$  at the Society's discretion, depending on the frequency of operations in semi-maritime stretches of water or lakes (wave and salt or brackish waters).

Hull plates before protective application, appendages, discharge valves, river chests, etc. have to be examined. In case of doubt, thickness measurements can be requested by the surveyor.

For performance of dry dock surveys, see Ch 3, Sec 5, [1].

## 4 Machinery

### 4.1 General

**4.1.1** The machinery including electrical installations will be subjected to the following surveys and operational checks:

- general inspection of machinery and boiler rooms, with special regard to the propulsion system, the auxiliary engines, possible fire and explosion sources, and checking of emergency exits as to their free passage
- external inspection of boilers and pressure vessels, with their appliances and safety devices. For details regarding boilers, see Ch 3, Sec 6
- inspection and checking of the remote control, quick-closing/stopping devices of pumps, valves, ventilators, etc.
- random checking of the remote control and automation equipment
- inspection and functional checking of the main and auxiliary steering gear, including their appliances and control systems
- if applicable, checking of all communication systems between bridge and machinery/boiler and steering gear rooms
- inspection of the bilge system, including remote control actuators and bilge filling level monitors
- checking of the main and emergency power supply systems, including the switch gear and other important electrical installations
- survey of explosion-proof installations
- random inspection and checking of essential equipment to the Surveyor's discretion.

### 4.2 Fire extinguishing systems

#### 4.2.1 General requirement

The following items/systems are subject to inspection and/or testing, where applicable:

- fire mains system, including hoses and nozzles
- gas fire extinguishing system
- dry powder fire extinguishing system
- foam fire extinguishing system
- sprinkler system, including water mist sprinkler system
- water and/or foam drencher system
- any other fixed fire extinguishing system provided
- portable fire extinguishers, mobile fire extinguishers, including portable foam application units
- fire detection and alarm systems
- emergency stops for ventilation fans, boiler forced draft fans, fuel transfer pumps, fuel oil purifiers
- quick-closing fuel valves
- fire closures, fire dampers, etc.
- fireman's outfits, if required.

#### 4.2.2 Fire hoses and nozzles

Fire hoses and nozzles provided are to be included in the testing of the fire mains system to the Surveyor's discretion.

#### 4.2.3 Fixed fire extinguishing systems

Fixed fire extinguishing systems, such as gas, foam, dry powder or water mist systems, including gas cylinders are subject to maintenance every 2 years.

On the occasion of these inspections all hose assemblies must be subjected to a visual check. All hose assemblies made of synthetic rubber must be replaced according to manufacturer's instructions.

The installation, maintenance, monitoring and documentation of fixed fire extinguishing systems according to Statutory Regulations, for the engine room, pump room and all spaces containing essential equipment, such as switchboards, compressors, etc., and for the refrigeration equipment, if any, shall only be performed by recognized specialized companies.

#### 4.2.4 Portable and mobile fire extinguishers

Portable and mobile fire extinguishers are subject to inspection by approved or recognized specialized company every 2 years. Maintenance and eventual pressure testing shall be carried out as appropriate in accordance with the manufacturer's instructions or applicable Rules. Each extinguisher is to be provided with a label showing the date of inspection and name and signature of the approved or recognized specialized company.

A protocol of the inspections and maintenance work carried out is to be kept on board.

#### 4.2.5 Foam concentrate

Foam concentrate for fixed foam fire extinguishing systems is to be examined not later than 3 years after filling into the system, and yearly thereafter. The examination is to be performed by the manufacturers or by an independent recognized laboratory. Reports are to be presented to the Surveyor. Manufacturer's certificates stating the properties of the foam concentrate shall be available on board for reference.

The foam concentrate for the portable foam applicators is to be renewed on the occasion of each class renewal.

More extensive regulations regarding other inspection intervals/performance of the tests should be observed.

### 4.3 Machinery and electrical installations

#### 4.3.1 Measurements

The following measurements are generally to be performed unless it can be proved by valid protocols that they have been carried out recently:

- crank web deflection, main engine(s)
- crank web deflection, auxiliary diesel engine(s) (where relevant)
- axial thrust bearing clearance of shafting system(s)
- axial thrust bearing clearance of main and auxiliary gas turbine rotors (where applicable)
- insulation resistance of generators and electrical motors, including cabling and switch gear.

#### 4.3.2 Operational tests

In addition to the requirements under [4.1.1], the following system components are to be subjected to operational tests:

- emergency generating set, including emergency switchboard (where applicable)
- emergency bilge valve(s)
- bilge, ventilation and monitoring systems for the carriage of dangerous substances
- drainage facilities of starting-air and control-air receivers
- general operational test of the machinery and electrical installation to demonstrate unrestricted operability, as indicated by the Surveyor.

#### 4.3.3 Monitoring equipment

The monitoring equipment and the automated functions of the machinery installation are to be subjected to operational trials under service conditions. The bridge remote control equipment of the propulsion system will be examined as required by the Surveyor.

### 4.4 Machinery installations and safety systems on tankers

#### 4.4.1 General requirement

On tankers the following installations and equipment are to be checked:

- electrical equipment, in particular electrical installations in areas of explosion hazard, in which ignitable gas mixtures or water vapours may accumulate
- level/overflow alarms
- level indicators
- tank venting systems
- flame arresters
- piping, valves and fittings, pumps
- pump room equipment, including ventilation system
- fire-extinguishing equipment
- pressure/vacuum relief valves.

#### 4.4.2 Additional surveys on gas tankers

The following additional surveys are to be carried out on gas tankers:

- venting system of cargo tanks and holds spaces
- all gastight bulkhead penetrations including gastight shaft sealing, if provided
- cargo handling control and safety systems, if practicable, such as:
  - emergency shut down valves at shore connections and tanks
  - control, alarm and safety systems monitoring the pressure in cargo tanks, cargo piping and hold spaces
  - cargo tanks level gauging including alarm and safety functions
  - cargo temperature monitoring systems
  - control, alarm and safety systems of cargo compressors and cargo pumps
- gas detection equipment including indicators and alarms in operation
- ventilation systems of all spaces in cargo area
- inert gas or dry air installations in operation, including the means for preventing backflow of cargo vapour to gas safe areas
- gastightness of wheelhouse doors and windows
- sealing arrangement of tank/tank domes, penetrating decks/tank covers, of portable and permanent drip trays or insulation for deck protection in the event of cargo leakage.

## 5 Installations under pressure

### 5.1 General

**5.1.1** For steam boiler installations, thermal oil plants and pressure vessels, see Ch 3, Sec 6.

## SECTION 3

## CLASS RENEWAL SURVEYS

### 1 General

#### 1.1 Scope

**1.1.1** Class renewal surveys - also called special surveys - are to be carried out at the intervals *p* indicated by the character of class period.

**1.1.2** Upon request, in exceptional cases extension of the class period may be granted by the Society, see Ch 3, Sec 1, [9.1].

**1.1.3** Class renewals for hull are numbered in the sequence I, II, III, etc. Regarding their scope, see [2].

**1.1.4** A class renewal survey may be carried out in several parts. The survey may be commenced at the last year during the class period. Considering [1.1.2], the total survey period of the class renewal survey must not exceed 12 months, except under special circumstances and by prior agreement from the Society.

**1.1.5** The new period of class will commence:

- with the following day, after which the previous class expires, provided that the class renewal survey has been completed within the 3 months preceding that date. In case of extension of validity of class certificate, the period of class will commence the following day after which the extension period expires
- with the date on which the class renewal survey has been completed, if this is the case more than 3 months before expiry of the previous class.

#### 1.2 Class renewal survey performance

**1.2.1** In addition to the inspections and checks to be carried out on occasion of the intermediate surveys, for class renewal the following requirements shall be observed.

**1.2.2** The class renewal survey is in principle to be held when the vessel is in dry dock or on a slipway unless a dry docking survey has already been carried out within the admissible period, see [1.1.4] and Ch 3, Sec 5.

### 2 Hull and hull equipment

#### 2.1 Class renewal I

**2.1.1** Class renewal I will have to be performed at the end of the first class period *p*. For definition see Ch 1, Sec 1, [1.2.6].

#### 2.1.2 Conditions for surveys

When examination of associated structure is required, insulation of compartments intended for refrigerated cargoes is to be removed over the necessary extent for examination by the Surveyor of the condition of the structure, unless constructional arrangements make such inspections possible without removing the insulation.

If deemed necessary by the Surveyor, defective cement and asphalt covering are to be removed. The steel work is to be examined before painting or before the cement or other coverings are renewed.

#### 2.1.3 Equipment for surveys

One or more of the following fracture detection methods may be required if deemed necessary by the Surveyor:

- radiography (X or gamma rays)
- ultrasonic test
- magnetic particle test
- dye penetrant test.

#### 2.1.4 Hull, general

At the Surveyor's discretion, the survey on principle covers the whole hull structure, particularly those areas which from experience are known to be exposed to fatigue and corrosion, such as openings in the shell and in the deck including doors and hatch coamings and covers, tanks, engine foundations and ends of superstructures. As a matter of principle, all machinery spaces, dry spaces, store rooms, pipe tunnels, cofferdams and void spaces are to be examined, including the piping systems.

#### 2.1.5 Tank surveys

The ballast tanks are to be inspected at the Surveyor's discretion, the procedure as outlined in [2.3.3] shall be followed.

Fuel oil, lubricating oil and fresh water tanks need not to be emptied, if their tightness can be verified by an external examination while they are completely filled and there is no reason for doubt as to their unobjectionable condition. However, fore and after peak are in any case subject to internal examinations at each class renewal survey.

#### 2.1.6 Tightness and pressure tests

Each compartment of the double bottom, cofferdams and all tanks, the boundary plating of which forms part of the vessel's main structure, are to be subjected to pressure tests. Fuel oil, lubricating oil and fresh water tanks may be tested by filling with the respective liquid.

The test pressure applied is to correspond to a head of water up to the top of the overflow/air pipe or up to the hatch of a tank, where applicable, whichever is higher. For oil, lubricating oil tanks, the test pressure applied is to correspond to a head of liquid up to the top of the tank.

The tightness of pipe tunnels outside the double bottom, and of void spaces, may be tested by air pressure. Air pressure testing of other spaces is to be agreed with the Surveyor from case to case. The overpressure must not exceed 0,2 bar and not be less than 0,1 bar.

### 2.1.7 Thickness measurements

If the Surveyor has reason to suspect inadmissible corrosion, he may require the rust to be removed from parts of the structure and thickness measurements to be carried out, see Ch 3, Sec 7.

### 2.1.8 Rudder, equipment, deck openings, etc.

The class renewal survey also covers other parts essential for the operation and safety of the vessel, such as rudder and steering gear, watertight doors, sluice valves, air and sounding pipes, gas-freeing and safety arrangements of cargo tanks, life-boat davits, companionways, hatches, scuppers and water drain pipes with their valves, fire protecting arrangements, masts, anchors, anchor chains and hawsers.

The rudder, rudder couplings and bearings, as well as the stock are to be surveyed in mounted condition, the rudder clearance to be measured and documented. The steering gear is to be subjected to an operational trial.

If considered necessary in view of the inspection results, the rudder and/or parts of the steering gear may have to be dismantled.

Bow, side and stern doors, if any, are to be checked.

### 2.1.9 Engine room structure

Particular attention is to be given to tank tops, shell plating in way of tank tops, brackets connecting side shell frames and tank tops, engine room bulkheads in way of tank top and the bilge wells. Where wastage is evident or suspected, thickness measurements are to be carried out.

For cargo pump rooms the survey consists of the verification of the good condition of:

- access ladders
- sumps
- all bulkheads for signs of leakage or fractures and in particular, the sealing arrangements of the bulkhead penetrations
- piping systems, their pumps and auxiliaries
- pump room ventilation system including ducting, dampers and screens.

### 2.1.10 Tankers

On tankers which - as can be proved - have exclusively carried cargo not causing corrosion, the cargo tanks shall be inspected at each alternate class renewal only, provided that it may be assumed on the basis of random checks that the component parts are still in satisfactory condition, and provided that no objections will result from the tightness and pressure tests as per [2.1.6].

During each class renewal, the cofferdams of tankers are to be hydrostatically tested to the test pressure as defined in the Rules for hull design and construction Pt B, Ch 2, Sec 4 and Pt B, Ch 8, Sec 3.

At each alternate class renewal only, the cargo tanks of tankers including gas collector if any, are to be tested by water and/or air pressure, to the test pressure stated in the Rules. In case of air tightness and pressure test, the test has to be made according to [2.1.6]. Where substances are carried which cause corrosion in connection with water, the kind of testing is to be specified.

At each class renewal, cargo tanks of tankers carrying acids and lye solution will be subjected to an internal examination and, at each alternate class renewal, to a hydrostatic pressure test. The test pressure to be fixed in accordance with the construction Rules, Pt B, Ch 2, Sec 4, depends on the density of the cargo.

### 2.1.11 Gas tankers

In addition to the requirements given under [2.1.10], the renewal survey of these vessels consists of the following examinations, measurements and testing:

- a) Thickness measurements and non-destructive testing of cargo tanks:
  - Thickness measurements of cargo tanks may be required. During these examinations, the state of insulation is checked around the considered areas
  - During the internal survey of the tanks, a non destructive testing procedure supplements the examination of cargo tanks, according to a programme and control means approved beforehand by the Society
  - When independent tanks (cylindrical under pressure) are concerned, in principle, 10% of the length of welded seams, in critical areas are tested: tank supports, reinforcement rings, attachment of hollow bulkheads, weldings of the fittings (domes, sumps) to the tankplates, supports of pumps, ladders, pipe connections. It may be necessary to remove partially the tank insulation to perform these examinations
  - For tanks where anti-corrosion coatings are found to be in satisfactory condition, the extent of thickness measurements may be specially considered, at the discretion of the Surveyor.
- b) Testing of cargo tanks:
  - Tanks for the carriage of pressurized liquefied gases are to be tested like pressure vessels. Deviating there from, cargo tanks need to be subjected to an internal inspection on the occasion of each other subsequent class renewal only, if in these tanks only gases or gas mixtures have been carried, which have no corrosive effect upon their walls, and if random checks suggest that the tanks are in satisfactory condition
  - Tightness of cargo tanks and domes is to be verified. However, for a vessel of less than fifteen years of age, a separate tightness test may not be required for each tank, provided the examination of the log book raises no doubts as to their tightness
  - Where the results of tanks examination and testing, or the examination of the log book raise doubts as to the structural integrity or tightness of a cargo tank, or when significant repairs have been carried out, hydraulic or hydropneumatic testing is to be carried out.

## c) External examination of cargo tanks:

- All independent tanks are to be examined externally wherever practicable. Where the insulation of a cargo tank or of the hull structure is accessible, the Surveyor examines the insulation externally including any vapour or protective barrier. If considered necessary by the Surveyor, insulation is to be removed in part or entirely so as to check the condition of the tank. Cargo tank supports, chocks and keys and the adjacent hull structure are to be examined
- Pressure relief valves of cargo tanks are to be opened up for examination, adjusted, sealed and tested to the Surveyor's satisfaction
- Pressure / vacuum relief valves or other pressure relief devices in the tank spaces, are to be examined to the Surveyor's satisfaction and, according to their design, opened up, adjusted and tested.

## d) Examination of the cargo area:

- The venting system of cargo tanks and hold spaces is to be checked. All gastight bulkheads are to be examined. Gastight bulkhead penetrations, including eventual gastight shaft sealings, are to be examined
- Gas detection equipment, including indicators and alarms in operation, are to be verified to be in good working order
- The inert gas or dry air installation in operation, including the means for preventing backflow of cargo vapour to gas safe areas will be checked
- Sealing arrangements of tanks/tank domes, penetrating decks / tank covers, of portable and permanent drip trays or insulation for deck protection in the event of cargo leakage are to be verified
- Hose and spool pieces used for segregation of piping systems for cargo, inert gas and bilge are to be examined.

**2.1.12 Tankers, piping systems**

Cargo piping, including valves and fittings, pumps as well as gas-freeing and safety equipment is to be surveyed.

At each class renewal, the loading and discharge pipes of tankers are to be tested to 1,25 times the allowable working pressure.

Note 1: When components are replaced in the cargo handling installation, it is the responsibility of the Owner to verify their compatibility with the chemical characteristics of the products transported.

**2.2 Class renewal II**

**2.2.1** The requirements for the second class renewal include those for class renewal I. Additionally the following investigations are to be carried out.

**2.2.2** The structural parts behind ceilings, floor coverings and insulation are to be examined, as required by the Surveyor and depending on the general condition of the vessel, see also [2.3.2].

**2.2.3** In principle, all tanks and cargo tanks are to be examined internally. The fuel oil, lubricating oil and fresh water tanks are to be at least examined at random, as required by the Surveyor. If applicable, in vessels aged 2p years and over, during the class renewal survey, all ballast tanks are to be examined for damages to the hull structural elements and to the coating. If applicable the procedure as outlined in Ch 3, Sec 2, [3.2.1] shall be followed.

Peak tanks see [2.1.5].

**2.2.4** The chain cables are to be ranged so that they can be examined for wear and other damages throughout their length. The mean diameter of the anchor chain cables is to be determined on at least 3 links per length.

**2.2.5** For thickness measurements, see Ch 3, Sec 7.

**2.3 Class renewal III and subsequent ones**

**2.3.1** The requirements for the third and the subsequent class renewals include those for the class renewal II. Additionally, the following investigations are to be carried out.

**2.3.2** Ceilings, linings and insulation of all spaces and cargo holds including steel ceiling adjacent to the shell plating and the inner bottom shall be removed, as indicated by the Surveyor, to enable the steel structure to be examined in detail.

For class renewals III and subsequent ones, the inner bottom ceilings may be partially removed at the Surveyor's discretion, to enable their assessment.

For class renewals IV and subsequent ones the inner bottom ceilings are to be completely removed and the tank top is to be carefully cleaned, such as to enable proper assessment of the tank top's condition.

The wall lining underneath windows in the outer shell is to be lifted as required by the Surveyor so that the structure behind may be examined.

**2.3.3** All tanks and cargo tanks are to be examined internally. The fuel oil, lubricating oil and fresh water tanks are to be examined internally and tested in accordance with the requirements, at the Surveyor's discretion, see also [2.2.3]. In the case of ballast tanks the procedure as outlined in Ch 3, Sec 2, [3.2.1] shall be followed, if applicable.

Peak tanks see [2.1.5].

**2.3.4** The rudder body is to be examined. The connections to the rudder stock and pertinent securing devices are to be inspected. Clearance has to be checked.

The rudder stock is to be surveyed as far as accessible. If deemed necessary in view of findings during this external inspection, the stock is to be dismantled. In way of the bearings, stock and pintle are to be examined for corrosion.

**2.3.5** The weight of the anchors is to be checked.

## 3 Machinery

### 3.1 General

**3.1.1** Except for individual machinery components as indicated in the following, the scope of all class renewal surveys related to the machinery including electrical installations is identical. If the continuous class renewal system is applied, the indications according to the Society are to be observed.

The class renewal survey includes the surveys and checks in Ch 3, Sec 2, [4].

### 3.2 Surveys requiring dry docking

**3.2.1** While the vessel is in dry dock, the river inlet and discharge valves are to be examined as to their condition and to be opened up and overhauled once within the class period.

Bow thrusters and positioning equipment are to be subjected to a general survey and to trials upon floating of the vessel.

For propeller(s), propeller and stern tube shaft(s), see [4].

### 3.3 Propulsion system

**3.3.1** Inspection of the propulsion system is mainly to cover:

- intermediate shafts and bearings, including thrust bearings
- gearing
- mechanical and flexible couplings
- turning gear
- the main propulsion engines, see [3.4.1].

**3.3.2** Spring elements under shear load made of rubber (with or without plies of fabric), of rubber ring clutches and other rubber couplings, are to be renewed, if required on account of negative inspection results.

### 3.4 Main propulsion diesel engines

**3.4.1** The following components are to be inspected and checked in the dismantled condition, where deemed necessary by the Surveyor:

- cylinders, cylinder covers, pistons, piston rods and bolts, cross heads, crankshaft and all bearings
- camshaft, with drive and bearings
- tie rods, frame, foundation and fastening elements
- injection system, attached pumps and compressors, superchargers, suction and exhaust lines, charging air coolers, filters, monitoring, control, protective and safety devices, starting, reversing and manoeuvring equipment.

Class renewal survey of the main engine can be made during the main overhaul subject to the presence of the surveyor.

Note 1: In case of medium speed diesel engines, dismantling and replacement of main and crank bearings may be postponed until the service life limits have been reached.

### 3.5 Auxiliary engines

**3.5.1** For all auxiliary engines, the survey scope is identical to that applying to the main engines. A reduction in the scope of survey may be agreed to upon examination of the maintenance protocols.

### 3.6 Auxiliary machinery, equipment and piping, survey performance

**3.6.1** The following components are to be inspected and tested in dismantled condition, where deemed necessary by the Surveyor:

- all pumps of the essential systems
- air compressors, including safety devices
- separators, filters and valves
- coolers, pre-heaters
- main and auxiliary steering gear
- anchor and other windlasses, including drives
- piping, pipe connections, compensators and hoses
- emergency drain valves and bilge piping systems
- tank filling level indicators
- installations preventing the ingress of water into open spaces
- freshwater distillation plant, where provided
- oil purifier and sewage systems
- additional systems and components, where deemed necessary by the Surveyor, as well as special equipment and installations if included in the scope of classification.

### 3.7 Gas tankers

#### 3.7.1 Cargo handling installation

Cargo piping system including valves, their monitoring devices, etc. are to be opened up for examination and their insulation removed as the Surveyor deems necessary. The complete system is tested to 1,25 times the design pressure. If the maximum delivery pressure of pumps is less than the design pressure of the piping system, testing to the pumps maximum delivery pressure may be accepted. In such cases, selected expansion bellows are to be dismantled, examined internally and tested to their design pressure to the Surveyor's satisfaction.

All pressure relief valves are to be opened up for examination, adjusted, sealed and tested to the Surveyor's satisfaction.

Cargo pumps, compressors, heat exchangers and other machinery including their prime movers which are a part of the cargo handling installation are to be examined.

### 3.7.2 Cargo handling control and safety installations

The cargo handling control and safety installations such as:

- emergency shut down valves at shore connections and tanks
- control, alarm and safety systems monitoring the pressure in cargo tanks, cargo piping and hold spaces
- cargo tanks level indicators including alarm and safety functions
- cargo temperature monitoring systems
- control, alarm and safety systems of cargo compressors and cargo pumps

are to be verified on good working.

Note 1: When components are replaced in the cargo handling installation, it is the responsibility of the Owner to verify their compatibility with the chemical characteristics of the products transported.

## 3.8 Electrical installations

### 3.8.1 General

The electric cables and their connections are to be inspected.

The insulation resistance of all electric machinery and equipment is to be tested.

### 3.8.2 Propulsion machinery

If the vessel is propelled by electrical machinery, the propulsion motors, the propulsion generators and exciters, particularly the windings of these machines, and their ventilating systems are to be examined and tested. Checking of the electric switch gear for operability is to cover also the protective, safety and interlocking devices.

### 3.8.3 Dynamic positioning systems

Dynamic positioning systems, if any, including control systems, are to be subjected to operational tests.

### 3.8.4 Auxiliary machinery and systems

The electrical machinery and equipment, including the generators, the motors of the essential services, the switch gear including its protective and interlocking devices, as well as the cable network are to be inspected externally. The remote stopping system, navigation lights, alarms, etc. are to be examined for proper operation. For vessels carrying dangerous goods, the condition of safety electrical equipment in relation to explosive atmospheres especially in cargo area has to be checked.

The insulation resistance is to be measured.

### 3.8.5 Explosion protection

Electrical installations and equipment located in spaces in which there is a risk of inflammable gas or vapour/air mixtures accumulating, are to be checked as to the explosion protection provided.

## 3.9 Pipes in tanks

**3.9.1** Where pipes are led through tanks, they are to be examined and, if required by the Surveyor, subjected to hydraulic tests, if for the respective tanks an internal examination is required. Depending on the results obtained, thickness measurements may be required.

## 3.10 Fire extinguishing and fire alarm systems

### 3.10.1 General requirements

Proof is to be furnished to the Surveyor that the entire fire extinguishing equipment is ready for operation and in a satisfactory condition.

On the occasion of every class renewal survey, the installation must be subjected to a visual inspection and test, if deemed necessary by the Surveyor.

Equipment (cylinders, bottles, fire extinguishers, etc.) has to be inspected according to the manufacturer's instructions or applicable codes by an approved or recognized company. Reports of these inspections have to be provided to the Surveyor.

Emergency exits/escapes are to be inspected.

### 3.11 Spare parts

**3.11.1** If needed and in order to be able to restore machinery operation and manoeuvring capability of the vessel in case of damage, spare parts for the main propulsion and the essential equipment shall be available on board, documented and maintained in a corresponding list.

### 3.12 Trials

**3.12.1** Upon completion of the surveys for class renewal, the Surveyor must be satisfied that the machinery installation including electrical installations and steering gear, as well as special equipment and installations are operable without restrictions. In case of doubt, trials and/or operational tests may be necessary.

## 4 Periodical surveys of propeller shafts and tube shafts, propellers and other systems

### 4.1 General

**4.1.1** For maintenance of the class, periodical surveys and tests of propeller shafts and tube shafts, propellers and other systems of vessels are to be carried out. The scope of surveys and tests unless specifically restricted is defined in [5].

The following surveys are applicable for propeller shafts and tube shafts:

- normal survey
- modified survey.

## 4.2 Normal survey for propeller shafts and tube shafts

**4.2.1** Where the propeller shafts and tube shafts are:

- fitted with continuous liners, or
- protected against corrosion, or
- mechanically grease-lubricated, or
- fitted with approved oil sealing glands, or
- made of corrosion resistant materials, or
- of increased corrosion allowance to the Society satisfaction,

the interval of survey is to be p years possibly in connection with the dry dock survey, in any of the following three cases:

- the propeller is fitted to a keyed shaft taper, or
- the propeller is fitted keyless to the shaft taper, or
- the propeller is fitted to a solid flange coupling at the aft end of the shaft, the design details of which are approved.

A non-destructive examination is to be made at each survey by an approved crack-detection method of the after end of the cylindrical part of the shaft (from the after end of the liner, if any), and of about one third of the length of the taper from the large end and of the area of keyway for keyed propellers, or of the forward part of the aft shaft taper for keyless propellers, or of the aft fillet flange area of the shaft for solid flange coupling propellers.

In all other cases, the nominal interval of survey may be shorter. The scope and extent of survey is to be agreed with the Society.

**4.2.2** Propeller shafts and tube shafts are to be sufficiently drawn to permit entire examination. For further details see [5.2.2].

For oil lubricated arrangement, the shaft need not be drawn at the occasion of the normal survey, provided that all exposed areas of the after shaft area as described in [4.2.1] are examined by an approved crack-detection method without drawing of the shaft, where:

- the clearances and wear down of the bearings
- the records of lubricating oil analysis, oil consumption
- the visible shaft areas

are examined and found satisfactory. Lubricating oil controls are to be performed as specified in [4.3.2]. For further details see [5.2.3]. Where any doubt exists regarding the findings of the above, the shaft is to be sufficiently drawn to permit an entire examination.

**4.2.3** Where the propeller is fitted on a solid flange coupling at the end of the shaft and in the case of proven designs and agreement of the Society, the crack detection test of the aft coupling flange fillet area of the shaft may be dispensed with.

## 4.3 Modified survey for propeller shafts and tube shafts

**4.3.1** For single and multi-shafting arrangements a modified survey may be accepted instead of the normal survey at alternate p, possibly in connection with the dry dock survey, subject to:

- the shaft is fitted with oil lubricated bearings and oil sealing glands, or it is mechanically grease-lubricated
- the shaft and its fittings are not exposed to corrosion
- new oil seals may be fitted without removal of the propeller (except in the case of keyed propeller)
- the design details are approved
- and provided that the clearances of the aft bearing are found in order and the lube oil and the oil sealing arrangements have proved effective in any of the following three cases:
  - where the propeller is keyed on the shaft taper and suitable crack-prevention measures are taken, or
  - where the propeller is fitted to a solid flange coupling at the end of the shaft, or
  - where the propeller is fitted keyless to the shaft taper.

The maximum interval between two successive normal surveys is not to exceed 2 periods of class.

**4.3.2** The shaft is to be sufficiently drawn to permit examination of the aft bearing contact area of the shaft. For further details see [5.3.2].

Drawing of the shaft to expose the aft bearing contact area of the shaft may not be required where a lubricating oil analysis is carried out regularly at intervals not exceeding 6 months, and the oil consumption is recorded and considered to be within permissible limits. The documentation on lubricating oil analysis is to be available on board and be checked. Each analysis should include the minimum parameters:

- water content
- chloride content
- content of bearing metal particles
- oil aging (resistance to oxidation).

Oil samples should be taken under service conditions. For further details see [5.3.3]. Where any doubt exists regarding the findings of the above, the shaft is to be sufficiently drawn to permit an examination according to [5.2.2].

## 4.4 Propellers

**4.4.1** During normal or modified surveys of the propeller shafts and tube shafts, the propellers as well as the remote and local control gear of controllable pitch propellers are to be surveyed at the Surveyor's discretion, depending on the findings.



## 4.5 Other systems

**4.5.1** Other systems for main propulsion purposes, such as rudder and steering propellers, pod propulsion systems, pump jet units, etc., are subject to the same survey intervals as propeller shafts and tube shafts.

The scope and extent of the surveys will be defined by the Society.

## 5 Survey performance of propeller shafts and tube shafts, propellers and other systems

### 5.1 General

**5.1.1** The periodical surveys and tests of propeller shafts and tube shafts, propellers and other systems (when applicable) are to be performed as follows.

### 5.2 Normal survey for propeller shafts and tube shafts

#### 5.2.1 General

The prerequisites are defined in [4.2]. It is distinguished between:

- survey with drawing of the shaft
- survey without drawing of the shaft.

#### 5.2.2 Survey with drawing of the shaft

The scope of normal survey consists in the following:

- dismantling of propeller and key, where fitted, visual inspection of all parts of the shaft especially the cone, the keyway, the bearing contact areas of the shaft, the bearings, and the thread of the propeller nut, or the fillet of the flange, examination of the propeller fit
- non-destructive examination by an approved crack-detection method of the aft end of the cylindrical part of the shaft and of about one third of the length of the taper from the large end and of the area of the keyway, or the fillet of the flange in case of a solid flange coupling
- examination of the bearing clearances and/or wear down before dismantling and after reassembling of the shaft with recording of the values measured
- overhaul of the shaft sealing glands according to manufacturer's instructions (sealing rings, liners, etc.).

#### 5.2.3 Survey without drawing of the shaft

Where the prerequisites as defined in [4.2.2] apply, for oil lubricating arrangement the scope of normal survey without drawing of the shaft consists in the following:

- examination of all accessible parts of the shaft including the propeller connection to the shaft

- non-destructive examination by an approved crack-detection method of the aft end of the cylindrical part of the shaft and of about one third of the length of the taper from the large end and of the area of the keyway for keyed propellers, or of the forward part of the aft shaft taper for keyless propellers, or of the after fillet flange area of the shaft for solid flange coupling propellers. The area to be examined is to be sufficiently exposed, if necessary by shifting of the propeller shaft or backing-off of the propeller
- examination of the bearing clearances, respectively wear down of the aft bearing
- overhaul of the shaft sealing glands according to manufacturer's instructions (sealing rings, liners, etc.)
- examination of the records of all regularly carried out lubricating oil analyses
- examination of the records of the oil consumption.

Where doubts exist regarding the findings, the shaft is to be drawn to permit an entire examination.

The crack detection test of the aft flange fillet area of the shaft for solid flange coupling propellers may in the case of proven designs be omitted with the agreement of the Society. See also [4.2.3].

### 5.3 Modified survey for propeller shafts and tube shafts

#### 5.3.1 General

The prerequisites are defined in [4.3]. It is distinguished between:

- survey with exposing the aft bearing contact area of the shaft
- survey without exposing the aft bearing contact area of the shaft.

#### 5.3.2 Survey with exposing the aft bearing contact area of the shaft

The scope of the modified survey consists in the following:

- drawing the shaft to expose the aft bearing contact area of the shaft
- examination of the forward bearing as far as possible and of all accessible parts of the shaft including the propeller connection to the shaft
- examination and overhaul of the oil sealing glands according to manufacturer's instructions (sealing rings, liners, etc.)
- examination of the bearing clearances and/or wear down of the shaft with recording of the values measured
- examination of the lubricating oil analysis and consumption to be within permissible limits
- for keyed propellers, performing a non-destructive examination by an approved crack-detection method of about one third of the length of the taper from the large end, for which dismantling of the propeller is required, examination of the propeller fit.

Where doubts exist regarding the findings, the shaft is to be further dismantled, respectively drawn.

### 5.3.3 Survey without exposing the aft bearing contact area of the shaft

Where the prerequisites as defined in [4.3.2] apply, the scope of the modified survey without exposing the aft bearing contact area of the shaft consists in the following:

- examination and overhaul of the oil sealing glands according to manufacturer's instructions (sealing rings, liners, etc.)
- examination of the bearing clearances and/or wear down of the shaft with recording of the values measured
- for keyed propellers, performing a non-destructive examination by an approved crack-detection method of about one third of the length of the taper from the large end, for which dismantling of the propeller is required, examination of the propeller fit.

In addition to this, the survey shall include the following:

- examination of the records of all regularly carried out lubricating oil analyses
- examination of the records of the oil consumption.

Where doubts exist regarding the findings, the shaft is to be further dismantled, respectively drawn.

## 5.4 Propellers

**5.4.1** Propellers are to be examined visually on the occasion of each propeller shaft or tube shaft survey.

**5.4.2** Damages, such as cracks, deformation, cavitation effects, etc. are to be reported and repaired at the Surveyor's discretion.

Controllable pitch propellers are to be checked for oil leakages. The function of the controllable pitch propellers has to be tested. The maintenance according to manufacturer's instructions has to be checked.

## 5.5 Other systems

**5.5.1** As far as practicable, the gearing and control elements of rudder and steering propellers are to be examined through inspection openings. For other systems such as pod propulsion systems, pump jet units, etc., if applicable, the scope of survey is to be agreed with the Society's concerned departments. In any cases, a survey has to be carried out during class renewal survey. The maintenance according to manufacturer's instructions is to be checked. A function test is to be carried out.

## 6 Inert gas systems

### 6.1 General

**6.1.1** Inert gas installations of the cargo tank area of tankers are to be checked as to their operability in accordance with the Society's survey programme, at intervals of nominally  $p/2$  years, preferably on the occasion of each class renewal and intermediate survey.

## 7 Bottom surveys

### 7.1 General

**7.1.1** For bottom surveys, see Ch 3, Sec 5.

## 8 Installations under pressure

### 8.1 General

**8.1.1** For steam boiler installations, thermal oil plants and pressure vessels, see Ch 3, Sec 6.

## SECTION 4

## NON-PERIODICAL SURVEYS

### 1 Damage and repair surveys

#### 1.1 General

**1.1.1** Damage and repair surveys fall due whenever the vessel's hull and machinery, including electrical installations, as well as special equipment and installations covered by the classification have suffered a damage which might affect validity of class, or if damage may be assumed to have occurred as a consequence of an average or some other unusual event, see also Ch 1, Sec 2, [6.3.2].

#### 1.2 Damage and repair surveys performance

**1.2.1** Where damage has occurred to the vessel's hull, machinery including electrical installations or special equipment and installations, the automatic/ remote-control systems, etc., the damaged parts are to be made accessible for inspection in such a way that the kind and extent of the damage can be thoroughly examined and ascertained, see also Ch 1, Sec 2, [6.3.2].

In the case of grounding, dry docking, see Ch 3, Sec 5, [1] or, alternatively, in-water survey, see Ch 3, Sec 5, [2], is required.

**1.2.2** The repair measures are to be agreed with the Surveyor such as to render possible confirmation of the class without reservations upon completion of the repairs. In general, a class confirmation with conditions of class, e.g. in the case of a preliminary repair ("emergency repair"), requires to be approved by the Society's head office or Society's representative.

**1.2.3** Surveys conducted in the course of repairs are to be based on the latest experience and instructions by the Society. In exceptional cases advice is to be obtained from the Society's head office or Society's representative, in particular where doubts exist as to the cause of damage.

**1.2.4** For older vessels, in the case of repairs and/or replacement of parts subject to classification, as a matter of principle, the construction Rules in force during their period of construction continue to be applicable.

This does not apply in the case of modifications required to the structure in the light of new knowledge gained from damage analyses, with a view to avoiding recurrence of similar damages.

**1.2.5** Regarding the materials employed and certificates required, the requirements for newbuildings are applicable. See Ch 1, Sec 2, [6.4].

**1.2.6** Regarding corrosion damages or excessive wastage beyond allowable limits that affect the vessel's class, see Ch 3, Sec 7.

### 2 Conversion surveys

#### 2.1 General

**2.1.1** In case of conversion and/or major changes of the vessel's hull, machinery, as well as special equipment and installations with effect to the class designation including notations, the Society's approval is to be requested as in the case of newbuildings and surveys are to be carried out, as described in Ch 1, Sec 2, [6.4].

A new or amended class designation will be assigned, where necessary.

### 3 Extraordinary surveys

#### 3.1 General

**3.1.1** The Society reserves the right to require extraordinary surveys to be held independently of any regular surveys. Such surveys may become necessary for examining the vessel's technical condition and are understood to be a part of Society's quality assurance system.

### 4 Survey for towage or voyage over sea

#### 4.1 General

**4.1.1** In compliance with the provisions of the General Conditions, a certificate of towage or voyage over sea may be issued upon satisfactory survey the scope of which is fixed in each particular case by the Society according to the towing or voyage over sea.

## SECTION 5

## BOTTOM SURVEYS

### 1 Dry dock surveys

#### 1.1 General

**1.1.1** Inland navigation vessels are generally to be subjected to a bottom survey once during the class period. As a matter of principle, class renewal includes a bottom survey in dry-dock.

**1.1.2** Intermediate surveys have to be carried out in dry-dock in the following cases:

- the vessel's shell is riveted, at the Surveyor's discretion
- the vessel's age exceeds 20 years, at the Surveyor's discretion
- the vessel's age exceeds 20 years and the service notation granted is tanker for transport of dangerous goods
- the vessel is granted with the range of navigation **IN(x)**,  $1,2 \leq x \leq 2$  at the Society's discretion, depending on the frequency of operations in semi-maritime stretches of water or lakes (wave and salt or brackish waters).

Moreover, for each bottom survey performed in addition to the bottom surveys stipulated by the classification requirements a Society's Surveyor shall be called to attend.

#### 1.2 Performance of dry dock surveys

##### 1.2.1 General

For the survey, the vessel is to be placed on sufficiently high and secure blocks, so that all necessary examinations can be carried out in a satisfactory manner. It may be necessary to clean the bottom and outer shell and/or remove rust from some areas to the Surveyor's satisfaction.

##### 1.2.2 Hull bottom survey

The survey covers an examination of the bottom and side plates of the shell plating, including any attachments, the rudder, the scuppers and water drain pipes, including their closures.

##### 1.2.3 Steering gear

The rudder, rudder couplings and bearings, as well as stocks and pintles, are to be surveyed in place, the rudder clearance is to be measured and documented. The steering gear is to be subjected to an operational trial.

If considered necessary in view of the inspection results, the rudder or parts of the steering gear will have to be dismantled.

Bow thrusters are normally to be inspected in place.

##### 1.2.4 Machinery and propulsion systems

For propeller(s), propeller shaft(s), see Ch 3, Sec 3, [4].

River inlet and discharge valves - including those of special equipment, if any - are to be checked as to their condition during each dry docking survey and to be opened up and overhauled once within a period of class.

### 2 In-water surveys

#### 2.1 General

**2.1.1** In particular circumstances, in-water survey, the extent of which is subject to preliminary agreement of the Society, may be performed under the following conditions.

#### 2.2 Approval

**2.2.1** The diving firm assisting in in-water surveys must be approved by the Society for this purpose according Society's procedures.

#### 2.3 Performance of survey

**2.3.1** Unless accessible from outside with the aid of the vessel's trim and/or heel, underwater parts are to be surveyed and/or relevant maintenance work is to be carried out with assistance by a diver whose performance is controlled by a Surveyor, using an underwater camera with monitor, communication and recording systems.

**2.3.2** Surveys of the underwater body are to be carried out in sufficiently clear and calm waters.

The vessel should be in light vessel condition.

The shell sides below the waterline and the bottom must be free from fouling.

**2.3.3** The underwater pictures on the surface monitor screen must offer reliable technical information such as to enable the Surveyor to judge the parts and/ or the areas surveyed.

**2.3.4** Documentation suited for video reproduction including voice is to be made available to Society.

#### 2.4 Additional examinations

**2.4.1** Where, for instance, grounding is assumed to have taken place, the Surveyor may demand individual parts of the underwater body to be additionally inspected from inside.

If during the in-water survey damages are found which can be assessed reliably only in dry-dock or require immediate repair, the vessel is to be dry docked. If the coating of the underwater body is in a condition which may cause corrosion damages affecting vessel's class to occur before the next dry docking, the vessel is to be dry docked.

## SECTION 6

## INSTALLATIONS UNDER PRESSURE

### 1 Steam boiler installations

#### 1.1 General

**1.1.1** Auxiliary steam generators/boilers, external and internal inspections are to be carried out at intermediate survey and at class renewal survey.

**1.1.2** More extensive Regulations of the country, where the vessel is registered, are to be observed by the Owner.

#### 1.2 External inspection performance

**1.2.1** The operability and general condition of the boiler, including its valves and fittings, pumps, piping, insulation, foundation, control and regulating systems and its protective and safety equipment, are to be examined.

**1.2.2** In detail, the following items are to be examined:

- the steam boiler plant for leakages
- the condition of the insulation
- the functioning of the indication, control and safety equipment
- the remote controls for the shut-off and discharge valves
- the leakage monitors for the heaters
- the emergency switch-off devices (oil firing, pumps)
- the safety switch-off devices for the oil burner
- lighting, emergency lighting and labelling.

#### 1.3 Internal inspection performance

**1.3.1** Where deemed necessary by the Surveyor, the boiler is to be cleaned on the water and flue gas sides and, if required, its outside surfaces are to be uncovered as well, so that all walls subject to pressure may be examined.

**1.3.2** Where the design of the boiler does not permit an adequate internal inspection, hydraulic tests may be required. It is left to the Surveyor's discretion to have the internal inspection supplemented by hydraulic tests, if considered necessary on account of the general condition/appearance of the boiler.

**1.3.3** Where there are doubts concerning the thickness of the boiler walls, measurements shall be made using a recognized gauging method. Depending on the results, the allowable working pressure for future operation is to be determined.

The hydraulic pressure test is to be carried out to a test pressure of 1,3 times the allowable working pressure. Only after repairs of major damages the test pressure shall be 1,5 times the allowable working pressure. If the maximum allowable working pressure is less than 2 bar, the test pressure shall be at least 1 bar above the maximum allowable working pressure. In no case the test pressure should exceed the test pressure applied during the first inspection of the boiler after completion.

**1.3.4** Steam pipes and heating coils shall be examined according to agreed procedures.

#### 1.4 Non periodical inspection

**1.4.1** Beyond the above periodical inspections, the Surveyor may require hydraulic tests or extraordinary inspections to be performed on other occasions, e.g. following repairs and maintenance work.

## 2 Thermal oil plants

#### 2.1 General

**2.1.1** Thermal oil plants are subject to periodical surveys. Thermal oil plants are to be subjected to external inspection and functional tests while in operation. At the class intermediate and renewal surveys proof of continued usability of the thermal oil made by a competent testing institution, shall be furnished.

**2.1.2** More extensive Regulations of the country, where the vessel is registered, are to be observed by the Owner.

#### 2.1.3 Tightness and pressure test

Tightness and pressure test of the whole plant to the admissible working pressure is to be performed at intervals of p years, counting from commencement of initial operation and possibly in connection with a class renewal survey.

Following repairs and renewals of plant components exposed to pressure, a pressure test is to be carried out to 1,5 times the admissible working pressure.

#### 2.2 Internal inspection performance

**2.2.1** During the internal inspection every p years the heating surfaces and, where appropriate, the combustion chamber, are to be examined for contamination, corrosion, deformations and leakages.

## 2.3 External inspection performance

**2.3.1** For external inspection performance, the following items are to be examined in detail:

- the thermal oil plant for leakages
- the condition of the insulation
- the functioning of the indication, control and safety equipment
- the remote controls for the shut-off and discharge valves
- the leakage monitors for the heaters
- the emergency switch-off devices (oil firing, pumps)
- the safety switch-off devices for the oil burner
- lighting, emergency lighting and labelling.

Reference is to be made to the test reports on the annual checks to be performed by an appropriate testing institution for continued usability of the thermal oil. This is to be confirmed in the report.

## 3 Pressure vessels

### 3.1 General

**3.1.1** Pressure vessels are to be inspected internally and externally every **p** years (see Ch 2, Sec 2, [3] for definition of **p**), possibly in connection with class renewal survey.

Pressure vessels for which pressure [bar] times cubic capacity [l] is less than or equal to 200 are to be surveyed on the occasion of checking of the pertinent piping system.

**3.1.2** Where pressure vessels cannot be satisfactorily examined internally and where their condition cannot be clearly stated during the internal inspection, approved non-destructive test methods and/or hydraulic pressure tests are to be carried out. The hydraulic pressure test is to be performed at a test pressure of 1,5 times the maximum allowable working pressure. If the maximum allowable working pressure is less than 2 bar, then the test pressure should be at least 1 bar more than the maximum allowable working pressure. Pressure vessels manufactured in accordance with non-class standards are to be tested according to that standards. The test pressure must in no case exceed the initial test pressure.

### 3.1.3 Pressure vessels survey performance

Pressure vessels which are subject to survey by the Society according to the construction Rules, are to be examined internally and externally every **p** years, possibly in connection with a class renewal survey.

CO<sub>2</sub> cylinders and other gas cylinders for fire-extinguishing purposes including vessels for powder extinguishers are to be submitted to periodical survey according manufacturer instructions or applicable Standards. Reports relative to these surveys carried out by recognized company have to be submitted to the surveyor.

Receivers in hydraulic or pneumatic control systems are to be examined during maintenance and repairs at the system; air receivers with a product of pressure by cubic capacity:

$$p \cdot l \geq 1000 \quad (p \text{ in bar, } l \text{ in litre})$$

are to be subjected to an internal inspection at least once during each class renewal.

The intervals between surveys as referred to may be reduced, depending on the findings.

## SECTION 7

# PERFORMANCE AND SCOPE OF THICKNESS MEASUREMENTS

### 1 Objectives of thickness measurements

#### 1.1 General

**1.1.1** Thickness measurements are a part of surveys to be carried out for the maintenance of class, and the analysis of these measurements is a factor in the determination and extent of the repairs and renewals of the vessel's structure.

**1.1.2** The corrosion and wear tolerances stipulate limits of wastage which are taken into account for reinforcements, repairs or renewals of steel structure. They are classified and determined by the Society, depending on the local conditions of the structural elements into:

- criteria on longitudinal and buckling strength
- criteria on local strength and pitting.

Each measured structural item is to be checked against these criteria, as far as applicable. When the criteria are not met, reinforcements, repairs and renewals are to be carried out as appropriate.

**1.1.3** The thickness of structural elements is checked by measurements, in order to assess whether or not the values stipulated in the construction Rules are kept, taking into account the admissible corrosion tolerances. Unless severe corrosion has occurred owing to particular service conditions, thickness measurements will not be required until class renewal II, see Tab 1 and Tab 2.

**Table 1 : Requirements for thickness measurements at class renewal survey  
General cargo vessels and other vessels**

Class renewal survey number			
Class renewal I	Class renewal II	Class renewal III	Class renewal IV and subsequent
Suspect areas	Suspect areas	Suspect areas	Suspect areas
	Within the cargo length area or 0,5 L amidships: <ul style="list-style-type: none"> <li>• selected deck plates</li> <li>• one transverse section</li> <li>• selected bottom / inner bottom plates</li> <li>• selected side shell plates</li> <li>• selected hatch covers and coamings <b>(1)</b></li> </ul>	Within the cargo length area or 0,5 L amidships: <ul style="list-style-type: none"> <li>• each exposed deck plate</li> <li>• two transverse sections</li> <li>• selected tank top plates</li> <li>• each bottom / inner bottom plates</li> <li>• each side shell plate</li> <li>• selected transverse and longitudinal cargo hold bulkheads <b>(1)</b></li> <li>• all hatch covers and coamings <b>(1)</b></li> </ul>	Within the cargo length area or 0,5 L amidships: <ul style="list-style-type: none"> <li>• each deck plate</li> <li>• three transverse sections <b>(3)</b></li> <li>• each bottom / inner bottom / tanktop plate</li> <li>• each side shell plate</li> <li>• all transverse and longitudinal cargo hold bulkheads <b>(1)</b></li> <li>• all hatch covers and coamings <b>(1)</b></li> </ul>
		Outside the cargo length area: <ul style="list-style-type: none"> <li>• selected deck plates</li> <li>• selected side shell plates</li> <li>• selected bottom plates</li> </ul>	Outside the cargo length area: <ul style="list-style-type: none"> <li>• each deck plate</li> <li>• each side shell plate</li> <li>• each bottom plate</li> </ul>
	Collision bulkhead, forward machinery space bulkhead, aft peak bulkhead <b>(1) (2)</b>		All transverse and longitudinal bulkheads outside cargo hold area <b>(1) (2)</b>
	In engine room <b>(2)</b> : <ul style="list-style-type: none"> <li>• river chests</li> <li>• river water manifold</li> <li>• duct keel or pipe tunnel plating and internals</li> </ul>		
		Selected internal structure such as ballast tank, floors and longitudinals, transverse frames, web frames, deck beams, girders, etc. Measurements may be increased if the Surveyor deems it necessary	

**(1)** Including plates and stiffeners.

**(2)** Measurements may be waived or reduced after satisfactory visual examination, when such bulkheads form the boundaries of dry void spaces or river chests, etc. are found in good condition.

**(3)** The number of transverse sections may be reduced at the Surveyor's discretion for vessels of length under 40 m.

**Table 2 : Requirements for thickness measurements at class renewal survey  
Tank vessels**

Class renewal survey number			
Class renewal I	Class renewal II	Class renewal III	Class renewal IV and subsequent
Suspect areas	Suspect areas	Suspect areas	Suspect areas
Measurement for general assessment and recording of corrosion pattern of those structural members subject to close-up survey according to Tab 3			
	Within the cargo length area: <ul style="list-style-type: none"> <li>selected deck plates</li> <li>one transverse section</li> <li>selected bottom / inner bottom plates</li> <li>selected side shell plates</li> <li>selected hatch covers and coamings (1)</li> </ul>	Within the cargo length area: <ul style="list-style-type: none"> <li>each deck plate</li> <li>two transverse sections in two different tanks</li> <li>each bottom / inner bottom plate</li> <li>each side shell plate</li> <li>selected transverse and longitudinal cargo tank bulkheads (1)</li> <li>all hatch covers and coamings (1)</li> </ul>	Within the cargo length area: <ul style="list-style-type: none"> <li>each deck plate</li> <li>three transverse sections in three different tanks (3)</li> <li>each bottom / inner bottom plate</li> <li>each side shell plate</li> <li>all transverse and longitudinal cargo tank bulkheads (1)</li> <li>all hatch covers and coamings (1)</li> </ul>
		Outside the cargo length area: <ul style="list-style-type: none"> <li>selected deck plates</li> <li>selected side shell plates</li> <li>selected bottom plates</li> </ul>	Outside the cargo length area: <ul style="list-style-type: none"> <li>each deck plate</li> <li>each side shell plate</li> <li>each bottom plate</li> </ul>
	Collision bulkhead, forward machinery space bulkhead, aft peak bulkhead (1) (2)		All transverse and longitudinal bulkheads outside cargo length area (1) (2)
	In engine room (2): <ul style="list-style-type: none"> <li>river chests</li> <li>river water manifold</li> <li>duct keel or pipe tunnel plating and internals</li> </ul>		
		Selected internal structure such as ballast tanks, floors and longitudinals, transverse frames, web frames, deck beams, girders, etc. Measurements may be increased if the Surveyor deems it necessary	
(1) Including plates and stiffeners. (2) Measurements may be waived or reduced after satisfactory visual examination, when such bulkheads form the boundaries of dry void spaces or river chests, etc. are found in good condition. (3) The number of transverse sections may be reduced at the Surveyor's discretion for vessels of length under 40 m.			

**Table 3 : Requirements for close-up survey at class renewal survey of Tank vessels**

Class renewal survey number			
Class renewal I	Class renewal II	Class renewal III	Class renewal IV and subsequent
	Within the cargo length area: <ul style="list-style-type: none"> <li>selected deck plates in one tank for survey from inside of the tank</li> <li>selected deck longitudinals / brackets in one tank (1)</li> <li>one transverse section selected in one representative cargo tank</li> </ul>	Within the cargo length area: <ul style="list-style-type: none"> <li>selected deck plates in two tanks for survey from inside of the tank</li> <li>selected deck longitudinals / brackets in two tanks (1)</li> <li>selected bulkheads for survey of upper and lower parts (1)</li> <li>two transverse sections selected in two representative cargo tank</li> <li>selected plates and stiffeners in one representative ballast tank</li> </ul>	Within the cargo length area: <ul style="list-style-type: none"> <li>selected deck plates in four tanks for survey from inside of the tank</li> <li>selected deck longitudinals / brackets in four tanks (1)</li> <li>all bulkheads for survey of upper and lower parts (1)</li> <li>three transverse sections selected in three representative cargo tanks, including all transverse sections in one representative cargo tank (2)</li> <li>selected plates and stiffeners in all ballast tanks</li> </ul>
(1) Including plates and stiffeners. (2) The number of transverse sections may be reduced at the Surveyor's discretion for vessels of length under 40 m.			



**1.1.4** Thickness measurements are to be carried out in accordance with recognized methods and by authorized personnel or companies.

Note 1: The specific guidelines of the Society give details about the scope of authorization.

**1.1.5** Rust and contamination are to be removed from the components to be examined. The Surveyor is entitled to require check measurements or more detailed measurements to be performed in his presence. The thickness measurements are to be witnessed by the Surveyor on board to the extent necessary to control the process.

**1.1.6** The scope of thickness measurement as well as the reporting shall be fixed in a survey planning meeting between the Surveyor, representatives of the vessel's Owner and the approved thickness measurement operator/firm well in advance of measurements and prior to commencing the survey.

**1.1.7** Thickness measurements of structures in areas where close-up surveys are required shall be carried out simultaneously with the close-up survey.

## 2 Definitions

### 2.1 Ballast tank

**2.1.1** A ballast tank is a tank that is being primarily used for water ballast. A tank which is used for both cargo and water ballast will be treated as a ballast tank when substantial corrosion has been found in such tank, see [2.8.1].

### 2.2 Spaces

**2.2.1** Spaces are separate compartments such as holds and tanks.

### 2.3 Overall survey

**2.3.1** An overall survey is a survey intended to report on the overall condition of the hull structure and determine the extent of additional close-up surveys.

### 2.4 Close-up survey

**2.4.1** A close-up survey is a survey where the details of structural components are within the close visual inspection range of the Surveyor, i.e. normally within reach of hand.

### 2.5 Transverse section

**2.5.1** A transverse section includes all longitudinal members contributing to longitudinal hull girder strength, such as plating, longitudinals and girders at the deck, side shell, bottom, inner bottom, longitudinal bulkheads, and plating in side tanks, as well as relevant longitudinals, as applicable for the different vessels. For a transversely framed vessel, a transverse section includes adjacent frames and their end connections in way of transverse sections.

### 2.6 Representative tanks or spaces

**2.6.1** Representative tanks or spaces are those which are expected to reflect the condition of other tanks or spaces of similar type and service and with similar corrosion protection systems. When selecting representative tanks or spaces, account should be taken of the service and repair history on board and identifiable suspect areas.

### 2.7 Critical structural area

**2.7.1** Critical structural areas are locations which have been identified from calculations to require monitoring or from the service history of the subject vessel or from similar vessels or sister vessels, if applicable, to be sensitive to cracking, buckling or corrosion which could impair the structural integrity of the vessel.

### 2.8 Substantial corrosion

**2.8.1** Substantial corrosion is an extent of corrosion such that assessment of the corrosion pattern indicates a wastage in excess of 75% of allowable margins, but within acceptable limits.

### 2.9 Coating condition

**2.9.1** Coating condition is defined as follows:

- good: condition with only minor spot rusting
- fair: condition with local breakdown at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for poor condition
- poor: condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.

### 2.10 Suspect areas

**2.10.1** Suspect areas are locations showing substantial corrosion and/or considered by the Surveyor to be prone to rapid wastage.

### 2.11 Cargo area for vessels carrying liquid cargo in bulk

**2.11.1** The cargo area is that part of the vessel which contains cargo tanks, slop tanks and cargo/ballast pump rooms, cofferdams, ballast tanks and void spaces adjacent to cargo tanks and also deck areas throughout the entire length and breadth of the part of the vessel over the above-mentioned spaces.

### 2.12 Cargo area for dry cargo vessels

**2.12.1** The cargo area is that part of the vessel which includes all cargo holds and adjacent areas including fuel tanks, cofferdams, ballast tanks and void spaces.

### 3 Scope and extent of measurements for class renewal survey

#### 3.1 General

**3.1.1** The thickness measurements required by the Rules consist of:

- systematic thickness measurements, i.e. measurements of different parts of the structure in order to assess the overall and local strength of the vessel
- measurements of suspect areas as defined in [2.10.1]
- additional measurements on areas determined as affected by substantial corrosion as defined in [2.8.1].

#### 3.2 Main hull structural elements

**3.2.1** As applicable, in class renewal II and all subsequent ones, the plate thickness of the main and essential longitudinal and transverse structural hull elements are to be checked by thickness measurements. The number of measurements depends on the vessel's maintenance condition and is left to the Surveyor's discretion. The minimum requirements for thickness measurements on the occasion of class renewal surveys are stated in Tab 1 and Tab 2, depending on the vessel's class renewal survey number. Respective thickness measurements to determine the general level of corrosion are to be carried out.

#### 3.3 Reduction of thickness measurement scope

**3.3.1** The extent of thickness measurements may be reduced, in comparison with those stated in Tab 1 and Tab 3, provided during the close-up examination the Surveyor satisfies himself that there is no structural diminution and the protective coating, where applied, continues to be effective. When the structure is coated and the coating is found to be in good condition, as defined in [2.9.1], the Surveyor may, at his discretion, accept a reduced program of thickness measurements in the corresponding areas. Other effective protective arrangements may also be considered. The requirements for close-up survey of tank vessels are stated in Tab 3.

#### 3.4 Extension of thickness measurement scope

**3.4.1** The Surveyor may extend the scope of the thickness measurement as deemed necessary. This applies especially to areas with substantial corrosion. When thickness measurements indicate substantial corrosion, as defined in [2.8.1] the number of thickness measurements is to be increased to determine the extent of substantial corrosion.

#### 3.5 Transverse sections

**3.5.1** Transverse sections shall be chosen where largest corrosion rates are suspected to occur or are revealed by deck plating measurements.

#### 3.6 Ballast tanks

**3.6.1** If applicable, in the case of major corrosion damages, the structural elements of ballast tanks are to be checked by thickness measurements.

#### 3.7 Substantial corrosion and suspect areas

**3.7.1** Where special reasons exist, the Surveyor may demand thickness measurements to be carried out already on the occasion of class renewal I, also outside the area of 0,5 L amidships. The same applies in the case of conversion or repair of a vessel.

#### 3.8 Hull equipment

**3.8.1** In class renewal II and all subsequent class renewals the cross sectional areas of the anchor chain cables are to be determined. The mean diameters of the anchor chain cables are to be determined by representative measurements, approximatively 3 links per length of 27,5 m, made at the ends of the links where the wear is the greatest. The weights of the anchors are to be checked in class renewal III and all subsequent class renewals. For permissible tolerances see [4.4].

### 4 Corrosion and wear tolerances

#### 4.1 General

**4.1.1** Where thickness measurements result in corrosion and wear values exceeding those stated in the following, the respective hull structural elements will have to be renewed.

#### 4.2 Longitudinal and buckling strength

**4.2.1** In general, the applicable criteria on longitudinal and buckling strength will be decided by the Society, if needed, on a case by case basis.

#### 4.3 Local strength and pitting

**4.3.1** The following apply to vessels built according to net scantling concept.

##### 4.3.2 Large surfaces

Where applicable, the maximum permissible large-surface reduction of plate thickness and web thickness of profiles should not exceed the values of corrosion additions as stipulated in Pt B, Ch 2, Sec 2, [7.1.2] for steel and Pt B, Ch 2, Sec 2, [7.1.3] for stainless steel or aluminium alloys.

##### 4.3.3 Isolated areas

The maximum permissible locally limited reduction of thickness is  $1,25 t_c$ , where  $t_c$  is the value of corrosion addition as stipulated in Pt B, Ch 2, Sec 2, [7.1.2] for steel and Pt B, Ch 2, Sec 2, [7.1.3] for stainless steel or aluminium alloys.

#### 4.3.4 Pits

Beyond the calculated corrosion additions  $t_c$ , and at the Surveyor's discretion, a maximum permissible locally limited reduction of thickness for isolated pits of 0,35, respectively of 0,2 times the as-built thickness for 50% scattered pits, may be accepted.

#### 4.4 Anchor equipment

**4.4.1** Maximum permissible reduction of the mean diameter of chain links: 12 %.

Maximum permissible reduction in weight of anchors: 10%.

## 5 Reporting

### 5.1 General

**5.1.1** Appropriate reporting forms recommended by the Society are to be used for recording thickness measurements.

The report is to provide the name of the vessel, the location of measurement, the thickness measured and the corresponding original thickness. Furthermore, the report is to include the date when the measurements were carried out, the type of measuring equipment, the names and the qualification of the operator and his signature.

The single measurement recorded is to represent the average of multiple measurements.

The report shall be verified and validated by the Surveyor.

