



2024

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# Introduction to the Classification Technical Rules

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## 1. LIST OF CLASSIFICATION TECHNICAL RULES

Rules for the Classification of Steel Ships	Guidance Relating to the Rules for the Classification of Steel Ships
<ul style="list-style-type: none"> <li>- Pt 1 Classification and Surveys (K/E) (2024)</li> <li>- Pt 2 Materials and Welding (K/E) (2024)</li> <li>- Pt 3 Hull Structures (K/E) (2024)</li> <li>- Pt 4 Hull Equipment (K/E) (2024)</li> <li>- Pt 5 Machinery Installations (K/E) (2024)</li> <li>- Pt 6 Electrical Equipment and Control Systems (K/E) (2024)</li> <li>- Pt 7 Ships of Special Service (Ch1–Ch4, Ch7–Ch10) (K/E) (2024)</li> <li>- Pt 7 Ships of Special Service (Ch5, Ch6) (K/E) (2024)</li> <li>- Pt 8 Fire Protection and Fire Extinction (K/E) (2024)</li> <li>- Pt 9 Additional Installations (K/E) (2024)</li> <li>- Pt 10 Hull Structure and Equipment of Small Steel Ships (K/E) (2024)</li> <li>- Pt 11 Common Structural Rules for Bulk Carriers (K/E) (2014)</li> <li>- Pt 12 Common Structural Rules for Double Hull Oil Tankers (K/E) (2014)</li> <li>- Pt 13 Common Structural Rules for Bulk Carriers and Tankers (K/E) (2024)</li> <li>- Pt 14 Structural Rules for Container Ships (K/E) (2024)</li> <li>- Pt 15 Structural Rules for Membrane Type Liquefied Natural Gas Carriers (E) (2024)</li> </ul>	<ul style="list-style-type: none"> <li>- Pt 1 Classification and Surveys (K/E) (2024)</li> <li>- Pt 2 Materials and Welding (K/E) (2024)</li> <li>- Pt 3 Hull Structures (K/E) (2024)</li> <li>- Pt 4 Hull Equipment (K/E) (2024)</li> <li>- Pt 5 Machinery Installations (K/E) (2024)</li> <li>- Pt 6 Electrical Equipment and Control Systems (K/E) (2024)</li> <li>- Pt 7 Ships of Special Service (Ch1–Ch4, Ch7–Ch10) (K/E) (2024)</li> <li>- Pt 7 Ships of Special Service (Ch5, Ch6) (K/E) (2024)</li> <li>- Pt 8 Fire Protection and Fire Extinction (K/E) (2024)</li> <li>- Pt 9 Additional Installations (K/E) (2024)</li> <li>- Pt 10 Hull Structure and Equipment of Small Steel Ships (K/E) (2024)</li> <li>- Pt 13 Common Structural Rules for Bulk Carriers and Tankers (K/E) (2024)</li> <li>- Pt 14 Structural Rules for Container Ships (K/E) (2024)</li> </ul>

Rules for Offshore Structures	Guidance for Offshore Structures
<ul style="list-style-type: none"> <li>- Rules for the Classification of Mobile Offshore Units (K/E) (2024)</li> <li>- Rules for the Classification of Mobile Offshore Drilling Units (K/E) (2023)</li> <li>- Rules for the Classification of Fixed Offshore Structures (K/E) (2023)</li> </ul>	<ul style="list-style-type: none"> <li>- Guidance Relating to the Rules for the Classification of Mobile Offshore Units (K/E) (2024)</li> <li>- Guidance Relating to the Rules for the Classification of Mobile Offshore Drilling Units (K/E) (2023)</li> <li>- Guidance for Floating Offshore Production Units (K/E) (2023)</li> <li>- Guidance for Floating Liquefied Gas Storage and Regasification Units (K/E) (2019)</li> <li>- Guidance for Floating Liquefied Gas Production Units (K/E) (2019)</li> <li>- Guidance for OSV (K/E) (2024)</li> </ul>

Other Rules	Other Guidances
<ul style="list-style-type: none"> <li>- Rules for the Classification of Steel Barges (K/E) (2023)</li> <li>- Rules for the Classification of Underwater Vehicles (K/E) (2023)</li> <li>- Rules for the Classification of FRP Ships (K/E) (2014)</li> <li>- Rules for the Classification of Floating Docks (K/E) (2024)</li> <li>- Rules for the Classification of High Speed and Light Crafts (K/E) (2024)</li> <li>- Rules for the Classification of Ships Using Low-flashpoint Fuels (K/E) (2024)</li> <li>- Rules for the Towing Survey of Barges and Tugboats (K/E) (2022)</li> <li>- Rules for the Classification of Dredgers (K/E) (2023)</li> </ul>	<ul style="list-style-type: none"> <li>- Guidance Relating to the Rules for the Classification of Steel Barges (K/E) (2023)</li> <li>- Guidance Relating to the Rules for the Classification of Underwater Vehicles (K/E) (2023)</li> <li>- Guidance Relating to the Rules for the Classification of FRP Ships (K/E) (2014)</li> <li>- Guidance Relating to the Rules for the Classification of Floating Docks (K/E) (2024)</li> <li>- Guidance Relating to the Rules for the Classification of High Speed and Light Craft (K/E) (2023)</li> <li>- Guidance Relating to the Rules for the Classification of Ships Using Low-flashpoint Fuels (K/E) (2024)</li> </ul>

	<b>Other Guidances</b>
	<ul style="list-style-type: none"> <li>- Guidance for Approval of Manufacturing Process and Type Approval, Etc. (K/E) (2024)</li> <li>- Guidance for Floating Structures (K/E) (2024)</li> <li>- Guidance for Freight Containers (K/E) (2022)</li> <li>- Guidance for Single Point Mooring (K/E) (2017)</li> <li>- Guidance for Ships Carrying CNG in Bulk (K/E) (2011)</li> <li>- Guidance for Recreational Crafts (K/E) (2018)</li> <li>- Guidance for WIG Craft (Wing-In-Ground Effect Craft) (K/E) (2019)</li> <li>- Guidance for Large Yachts (K/E) (2014)</li> <li>- Guidance for Fuel Cell Systems on Board of Ships (K/E) (2023)</li> <li>- Guidance for Ships for Navigation in Ice (K/E) (2024)</li> <li>- Guidance for Approval of Risk-based Ship Design (K/E) (2015)</li> <li>- Guidance for Strength Assessment of Membrane-Type LNG Tanks under Sloshing Loads (E) (2022)</li> <li>- Guidance for LNG Fuel Ready Ships (K/E) (2017)</li> <li>- Guidance on Strength Assessment of Containerships Considering the Whipping Effect (K/E) (2024)</li> <li>- Guidance for Structural Strength Assessment of Pump Tower of LNG Carrier (K/E) (2017)</li> <li>- Guidance for Noise and Vibration (K/E) (2020)</li> <li>- Guidance for Shiplift and Transfer Systems (K/E) (2017)</li> <li>- Guidance for Battery Systems on Board of Ships (K/E) (2023)</li> <li>- Guidance for Maritime Cyber Security System (K/E) (2024)</li> <li>- Guidance for Floating LNG Bunkering Terminal (K/E) (2018)</li> <li>- Guidance for approval of Service Suppliers (K/E) (2024)</li> <li>- Guidance for Autonomous Ships (K/E) (2024)</li> <li>- Guidance for DC Distribution Systems (K/E) (2023)</li> </ul>

Other Rules	Other Guidances
	<ul style="list-style-type: none"> <li>- Guidance for Software Conformity Certification (K/E) (2022)</li> <li>- Guidance for Conformity Certification of Maritime Equipment Cyber Security (K/E) (2023)</li> <li>- Guidance for Composite Propellers (K/E) (2021)</li> <li>- Guidance of Heat Transfer Analysis for Ships Carrying Liquefied Gases in Bulk/Ships Using Liquefied Gases as Fuels) (K/E) (2021)</li> <li>- Guidance for Integrated Software Process Management (K/E) (2021)</li> <li>- Guidance for Fatigue Strength Assessment Including Springing) (2020)</li> <li>- Guidance for Prevention Systems of Pollution from Ships (K/E) (2023)</li> <li>- Guidances for Radiated Noise from Ships (K/E) (2024)</li> <li>- Guidance for Remote Inspection Techniques (K/E) (2021)</li> <li>- Guidance for Remote Survey (K/E) (2023)</li> <li>- Guidance for Ships designed to Prevent the spread of Infectious Disease (K/E) (2023)</li> <li>- Guidance for Smart System (K/E) (2023)</li> <li>- Provisional Guidance for Ships of Less Than 24 Meters Using Liquefied Petroleum Gas as Fuel (K/E) (2023)</li> <li>- Guidance for Cyber Resilience of Ships and Systems (K/E) (2024)</li> </ul>

## 2. USER'S GUIDE TO CLASSIFICATION TECHNICAL RULES

### 2.1 General

- 2.1.1 The purpose of this General has been prepared to introduce kinds, contents and user's guide for Classification Technical Rules published by Korean Register of Shipping (hereinafter called "the Society") to users.
- 2.1.2 Classification Technical Rules published by the Society are grouped into "Rules" and "Guidances" which mean all rules for the classification of ships, offshore installations and related equipment, etc., and "Guidance Relating to the Rules", which is prepared with the intent of giving details as to the treatment of the various provisions for items required the unified interpretations and items not specified in the Rules. The list of Classification Technical Rules is given in 1.
- 2.1.3 Amendments to the Classification Technical Rules that need to be implemented prior to publishing the Classification Technical Rules are issued without a printed copy of the entire Rules or the Guidances.

### 2.2 User's Guide

#### 2.2.1 Enforcement

Classification Technical Rules, in principle, shall come into force after 3 months from the approved date and "Amendments and Effective Date" is recorded at the beginning of each Classification Technical Rules for ready use.

#### 2.2.2 Format

"Rules for Steel Ships" are composed of 15 kinds and "Guidances for Steel Ships" are composed of 12 kinds.

"Rules for Offshore Structures" are composed of 3 kinds and "Guidances for Offshore Structures" are composed of 6 kinds.

"Other Rules" are composed of 8 kinds and "Other Guidances" are composed of 6 kinds.

"Other Guidance" is composed of 37 kinds

### 2.3 Numbering System

#### 2.3.1 "Rules for the Classification of Steel Ships" and "Guidance Relating to the Rules for the Classification of Steel Ships" (Part 1 to Part 10)

- (1) In principle, the text consists of Part, Chapter, Section, Article, Paragraph, Sub-paragraph, (A), (a) and (i).
- (2) An article consists of a section number and serial number, and the hundred means section number and the rest means serial number.  
(e.g.) For eleventh article in **Section 2 ; 211.**



- (3) The number of a figure or a table consists of part, chapter and serial number in each chapter.

The figure number is placed in the center under the figure, and the table number is placed in the top left hand corner of the table.

(e.g.) For eighth figure in **Chapter 7** of **Part 3; Fig 3.7.8**

For second table in **Chapter 1** of **Part 5; Table 5.1.2**

### **2.3.2 "Rules for the Classification of Steel Ships" and "Guidance Relating to the Rules for the Classification of Steel Ships" (Part 13 to Part 15)**

- (1) In principle, the text consists of Part, Sub-Part(for Part 13), Chapter, Section, Article, Sub-article, requirements.

- (2) An sub-article consists of a article number and serial number, and the requirements consists of sub-article and serial number.

(e.g.) For first article, first sub-article and first requirements : **1.1.1**

- (3) The number of a figure or a table consists of serial numbers in each section.  
The figure number is placed below the figure, and the table number is placed at the top of the table.

(e.g.) For first figure in each Section : **Figure 1**

For first table in each Section : **Table 1**

### **2.3.23 Other Rules and Other Guidance**

The same as **2.3.1**

### **2.3.34 Classification Rules other than 2.3.1, 2.3.2 and 2.3.23**

- (1) In principle, the text consists of Chapter, Section, Article, Paragraph, Sub-paragraph, (A), (a) and (i).

- (2) The remainder are the same as those specified in **2.3.1**. The number of a figure or of a table consists of chapter and serial number in each chapter.

(e.g.) For ninth figure in **Chapter 3; Fig 3.9**

For tenth table in **Chapter 3; Table 3.10**.

## **2.4 Cross-Reference to Articles and Paragraphs**

### **2.4.1 "Rules for the Classification of Steel Ships" and "Guidance Relating to the Rules for the Classification of Steel Ships"**

- (1) Where a paragraph in any chapter is quoted from an other chapter in the same part, the chapter, relevant article and paragraph are written in sequence.

(e.g.) For rules: in **Ch 1, 201. 1 (1)**, or in **Ch 1, 201. 1 (1)** of the Guidance.

For guidances: in **Ch 1, 201.1(1)** of the Rules, or in **Ch 1, 201.1(1)** of the Guidance.

- (2) Where a paragraph in any part is quoted from an other part, the part, chapter, relevant article and paragraph are written in sequence.

(e.g.) For rules: in **Pt 1, Ch 1, 201. 1 (1)**, or in **Pt 1, Ch 1, 201. 1 (1)** of the Guidance.

For guidances: in **Pt 1, Ch 1, 201. 1 (1)** of the Rules, or in **Pt 1, Ch 1, 201. 1 (1)** of the Guidance.

### 2.4.2 Classification Rules other than 2.4.1

Where the contents of any rules are quoted in the rules other than **2.4.1**, the names of the rules, part, chapter, relevant article and paragraph are written.

(e.g.) Where **Pt 1, Ch 2, 202.** of "Rules for the Classification of Steel Ships" is quoted in "Rules for the Classification of Steel Barges"; **Pt 1, Ch 2, 202.** of **Rules for the Classification of Steel Ships**.

## 2.5 Cross-Reference to Figures and Tables

### 2.5.1 "Rules for the Classification of Steel Ships" and "Guidance relating to the Rules for the Classification of Steel Ships"

(1) Where a figure or a table in any chapter is quoted from an other chapter in the same part, the number of the figure (or the table) is written.

(e.g.) For rules: in **Fig 2.1.1** (or **Table 2.1.1**), or in **Fig 2.1.1** (or **Table 2.1.1**) of the Guidance.  
For guidances: in **Fig 2.1.1** (or **Table 2.1.1**) of the Rules, or in **Fig 2.1.1** (or **Table 2.1.1**) of the Guidance.

(2) Where a figure or a table is quoted from an other part, the part and the number of the figure (or the table) are written.

(e.g.) For rules: in **Pt 2, Fig 2.1.1** (or **Table 2.1.1**), or in **Pt 2, Fig 2.1.1** (or **Table 2.1.1**) of the Guidance.

For guidances: in **Pt 2, Fig 2.1.1** (or **Table 2.1.1**) of the Rules, or in **Pt 2, Fig 2.1.1** (or **Table 2.1.1**) of the Guidance.

### 2.5.2 Classification Rules other than 2.5.1

Where a figure or a table of any rules is quoted in the rules other than **2.5.1**, the name of the rules, the part and the number of the figure (or the table) are written.

(e.g.) Where **Pt 3, Fig 3.3.1** (or **Table 3.3.1**) of "Rules for the Classification of Steel Ships" is quoted in "Rules for the Classification of Steel Barges": in **Pt 3, Fig 3.3.1** (or **Table 3.3.1**) of **Rules for the Classification of Steel Ships**.

## 2.6 Units

The SI-units (International System of Units) shown in **4.** are generally used in Classification Rules. However, the MKS-units (Metric System of Units) may be used together with SI-units, at the discretion of the Society. ↴

## 3. CONTENTS OF CLASSIFICATION TECHNICAL RULES

### 3.1 Contents of Rules for the Classification of Steel Ships

#### PART 1 CLASSIFICATION AND SURVEYS

##### CHAPTER 1 CLASSIFICATION

- Section 1 General
- Section 2 Character of Classification
- Section 3 Classification Survey during Construction
- Section 4 Classification Survey after Construction
- Section 5 Certificates and Reports
- Section 6 Application for Survey
- Section 7 Cooperation Duties of Owners
- Section 8 Competence, Duties of Surveyors and Responsibility and Scope of Classification
- Section 9 Suspension/Withdrawal of Class and Reclassification
- Section 10 Fees
- Section 11 Appeal on Disagreement
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- Section 13 Classification of Other Installations or Equipment
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##### CHAPTER 2 PERIODICAL AND OTHER SURVEYS

- Section 1 General
- Section 2 Annual Survey
- Section 3 Intermediate Survey
- Section 4 Special Survey(Hull, Equipment and Fire-extinguishing Appliances)
- Section 5-1 Special Survey(Machinery, Electrical Installations and Additional Installations)
- Section 5-2 Special Survey(Additional Requirements to Ship Types)
- Section 6 Docking Survey
- Section 7 Surveys of Propeller Shaft and Stern Tube Shaft, Etc.
- Section 8 Boiler Survey
- Section 9 Continuous Survey of Machinery
- Section 10 Occasional Survey
- Section 11 Remote Survey
- Section 12 Alteration Survey
- Section 13 Survey of Ships Carrying Dangerous Goods and Other Special Cargoes
- Section 14 Additional Installations Survey
- Section 15 Hull Surveys for General Dry Cargo Ships
- Section 16 Hull Surveys for Liquefied Gas Carriers
- Section 17 Survey Requirements for Shell and Inner Doors, Etc. of RoRo Ships
- Section 18 Additional Requirements
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**CHAPTER 3 HULL SURVEYS OF SHIPS SUBJECT TO THE ENHANCED SURVEY PROGRAMME**

- Section 1 General
- Section 2 Bulk Carriers
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- Section 2 Test Specimens and Testing Procedures
- Section 3 Rolled Steels
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**CHAPTER 2 WELDING**

- Section 1 General
- Section 2 Test Specimens and Testing Procedures
- Section 3 Welding work and Inspection
- Section 4 Welding Procedure Qualification Tests
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- Section 4 Materials
- Section 5 Weldings
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#### **CHAPTER 5 DECKS**

- Section 1 General
- Section 2 Effective Sectional Area of Strength Deck
- Section 3 Deck Plating
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#### **CHAPTER 6 SINGLE BOTTOMS**

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- Section 2 Centre Keelsons
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- Section 1 General
- Section 2 Centre Girders and Side Girders
- Section 3 Solid Floors
- Section 4 Bottom Longitudinals
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#### **CHAPTER 8 FRAMES**

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- Section 2 Frame Spacing
- Section 3 Hold Frames
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- Section 3 Side Scuttles, Rectangular Windows and Skylights
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- Section 7 Transverses and Girders
- Section 8 Pillars

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- Section 3 Material Protection
- Section 4 Hull Girder Strength
- Section 5 Platings
- Section 6 Stiffeners
- Section 7 Transverses and Girders
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- Section 2 Rudder Force
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- Section 5 Rudder Stocks
- Section 6 Rudder Plates, Rudder Frames and Rudder Main Pieces
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**CHAPTER 2 FIRE DETECTION AND EXTINCTION**

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Section 2 Fire Detection and TV Monitoring System

Section 3 Fire Extinction System

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### CHAPTER 3 STRUCTURES AND INSTALLATION

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Section 3 Fire Safety

Section 4 Electrical System

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Section 6 Fuel Cells Associated Auxiliaries

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## GUIDANCE FOR SHIPS FOR NAVIGATION IN ICE

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Section 2 Structural Requirements for Polar Class Ships

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### CHAPTER 3 SHIPS FOR ICE BREAKING CAPABILITY FOR NAVIGATION IN POLAR WATERS

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Annex 2 Ice Load cases for propeller and the shape of the propeller ice torque excitation for the ships strengthened for navigation in ice and polar class ships

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### **CHAPTER 3 TESTING**

Section 1 Test criteria

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Section 1 General

Section 2 Drawings and Data

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Section 2 Periodical Surveys

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## GUIDANCE FOR FLOATING LNG BUNKERING TERMINAL

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- Section 2 Definitions

### CHAPTER 2 CLASSIFICATION AND SURVEYS

- Section 1 General
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- Section 1 General
- Section 2 Design Loads
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- Section 4 Risk Assessment

### CHAPTER 4 MATERIALS AND WELDING

- Section 1 General

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- Section 2 Survival Capability and Location of Cargo Tanks
- Section 3 Longitudinal Strength
- Section 4 Structural Design and Analysis of the Hull
- Section 5 Hull Arrangements
- Section 6 Hull Equipment

### CHAPTER 6 POSITIONING SYSTEM

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- Section 2 Mooring Analysis
- Section 3 Design of Mooring Lines, etc.
- Section 4 Mooring Equipment
- Section 5 Single Pint Mooring Systems
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### CHAPTER 7 MACHINERY INSTALLATIONS

- Section 1 General
- Section 2 Piping Systems for Cargo Tanks
- Section 3 Use of Natural Gas as Fuel

### CHAPTER 8 ELECTRICAL EQUIPMENT AND CONTROL SYSTEMS

- Section 1 Hazardous Area
- Section 2 Electrical Equipment
- Section 3 Control Systems

### CHAPTER 9 VENTILATION

- Section 1 General

Section 2 Mechanical Ventilation in the Cargo Area

**CHAPTER 10 FIRE PROTECTION, FIRE EXTINCTION AND MEANS OF ESCAPE**

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Section 2 Means of Escape

**CHAPTER 11 PERSONNEL PROTECTION**

Section 1 Personnel Protection

**CHAPTER 12 BUNKERING SYSTEM**

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Section 2 Arrangement and Design of Bunkering Systems

Section 3 Bunker Transfer Systems

Section 4 Control, Monitoring and Safety Systems

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Section 6 Operation Requirements

**GUIDANCE FOR APPROVAL OF SERVICE SUPPLIERS**

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Section 2 Approval and Certification

**CHAPTER 2 Approval of Service Suppliers listed in IACS URZ17)**

Section 1 Firms engaged in thickness measurements on ships or mobile offshore units(Z17 Annex1-1)

Section 2 Firms engaged in tightness testing of closing appliances such as hatches, doors etc. with ultrasonic equipment (Z17 Annex 1-2)

Section 3 Firms carrying out an in-water survey on ships and mobile offshore units by diver or Remotely Operated Vehicle(ROV) (Z17 Annex 1-3)

Section 4 Firms engaged in inspection and maintenance of fire extinguishing equipment & systems and self contained breathing apparatus(Z17 Annex 1-4 & Annex 1-7)

Section 5 Firms engaged in servicing life saving appliances(Z17 Annex 1-5 & Annex1-13)

Section 6 Firms engaged in inspections and testing of radio communication equipment (Z17 Annex 1-6)

Section 7 Firms engaged in examination of Ro-Ro ships bow, stern, side and inner doors (Z17 Annex 1-8)

Section 8 Firms engaged in annual performance testing of Voyage Data Recorders(VDR) and simplified Voyage Data Recorders(S-VDR) (Z17 Annex 1-9)

Section 9 Firms engaged in inspections of low location lighting systems using photo luminescent materials and evacuation guidance system used as an alternative to low-location lighting system (Z17 Annex 1-10)

Section 10 Firms engaged in sound pressure level measurements of public address and general alarm systems on board ships(Z17 Annex 1-11)

Section 11 Firms engaged in testing of coating system in accordance with IMO Res.MSC. 215(82) as amended and IACS UI SC223 and/or MSC. 288(87) as amended(Z17 Annex 1-12)

- Section 12 Firms engaged in measurements of Noise level Onboard Ships(Z17 Annex 1-14)
- Section 13 Firms engaged in tightness testing of primary and secondary barriers of gas carriers with membrane cargo containment systems for vessels in service(Z17 Annex 1-15)
- Section 14 Firms engaged in survey using Remote Inspection Techniques(RIT) as alternative means for Close-up Survey of the structure of ships and mobile offshore units(Z17 Annex 1-16)
- Section 15 Firms engaged in cable transit seal systems inspection of on ships and mobile offshore units(Z17 Annex 1-17)
- Section 16 Firms engaged in Commissioning Testing of Ballast Water Management Systems (BWMS) units (Z17 Annex 1-18)

### **CHAPTER 3 Approval of Service Suppliers listed in IACS UR W35**

- Section 1 Independent NDT company or NDT department/section that forms a part of a shipbuilding company providing NDT services on ship and/or offshore components /structures)

### **CHAPTER 4 Approval of Service Suppliers not listed in IACS UR Z17**

- Section 1 Firms engaged in vibration measurement in relation to habitability of ship
- Section 2 Firms engaged in visual and/or sample checks for preparation of inventory of hazardous materials(IHM)
- Section 3 Firms engaged in measurement of URN from ships

## **GUIDANCE FOR AUTONOMOUS SHIPS**

### **CHAPTER 1 GENERAL**

- Section 1 General
- Section 2 Operation Plan
- Section 3 Cybersecurity

### **CHAPTER 2 CLASS SURVEY**

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- Section 2 Classification Survey
- Section 3 Periodical Survey for Maintaining Registration

### **CHAPTER 3 AUTONOMOUS SYSTEMS AND AUTONOMOUS SHIPS**

- Section 1 Configuration and Function of Autonomous Systems
- Section 2 Requirements for Autonomous Systems and Autonomous Ships

### **CHAPTER 4 RISK-BASED APPROVAL**

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- Section 2 Considerations when Approving Risk-based Design
- Section 3 Measures to Reduce Risk

## **GUIDANCE FOR DC DISTRIBUTION SYSTEMS**

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**CHAPTER 2 SYSTEM AND ELECTRICAL EQUIPMENT**

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Section 2 Electrical Equipment

**CHAPTER 3 CONTROL SYSTEMS**

Section 1 General

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**CHAPTER 4 CLASSIFICATION SURVEYS**

Section 1 General

Section 2 Testing and Inspection

Section 3 Testing and Inspection of DC Circuit-breaker

**CHAPTER 5 RISK ASSESSMENT**

Section 1 General

Section 2 Risk Assessment

**GUIDANCE FOR COMPUTER-BASED SYSTEM CONFORMITY ASSESSMENT**

**CHAPTER 1 GENERAL**

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Section 2 Assessment process

**CHAPTER 2 COMPUTER-BASED SYSTEM CONFORMITY ASSESSMENT**

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Section 2 Embedded software

Section 3 Application software

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- Section 2 Plant audit
- Section 3 Approval test

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- Section 2 Drawing approval
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**GUIDANCE OF HEAT TRANSFER ANALYSIS FOR SHIPS CARRYING LIQUEFIED GASES  
IN BULK/SHIPS USING LIQUEFIED GASES AS FULES**

**CHAPTER 1 GENERAL**

- Section 1 Application
- Section 2 Definitions
- Section 3 Summary of Guidances
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**CHAPTER 2 HEAT TRANSFER ANALYSIS FOR MEMBRANE TYPE**

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- Section 2 FEM Heat Transfer Analysis

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- Section 1 Analytical Heat Transfer Analysis
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- Section 1 Analytical Heat Transfer Analysis
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**GUIDANCE FOR INTEGRATED SOFTWARE PROCESS MANAGEMENT**

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- Section 1 Planning Process
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- Section 3 Linear springing assessment by comparative method

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- Section 1 Nonlinear springing assessment by direct method
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- Section 3 Nonlinear springing assessment for low-speed blunt ships where vertical bending moment is significant

## GUIDANCE FOR PREVENTION SYSTEMS OF POLLUTION FROM SHIPS

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- Section 3 Exhaust Gas Recirculation system(EGR)

### CHAPTER 3 SULPHUR OXIDES EMISSION ABATEMENT SYSTEM

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- Section 3 Exhaust Gas Cleaning system Ready ships
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- Section 4 Additional requirements for Wind Assisted Propulsion Systems

### CHAPTER 6 HULL AIR LUBRICATION SYSTEM

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- Section 3 Additional requirements for Hull Air Lubrication System
- Section 4 Survey

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- Section 2 Plans and Documents

### CHAPTER 2 CLASSIFICATION SURVEYS

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- Section 2 Test and Inspection
- Section 3 Periodical Surveys
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### CHAPTER 3 UNDERWATER NOISE

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- Section 2 Instrumentation
- Section 3 Measurement Procedure
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- Section 6 Criteria

**CHAPTER 4 AIRBORNE NOISE**

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- Section 2 Instrumentation
- Section 3 Measurement Procedure
- Section 4 Measurement Condition
- Section 5 Data Post-processing
- Section 6 Criteria

**GUIDANCE FOR REMOTE SURVEY**

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- Section 2 Requirements for equivalency
- Section 3 Scope and procedures
- Section 4 Information and Communication Technology (ICT)
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**CHAPTER 3 SURVEY USING RIT**

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- Section 2 Class Notation



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Section 2 Definitions and abbreviation

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Section 2 Classification Survey

Section 3 Goals and organization of requirements

Section 4 Requirements for Cyber Resilience of ships

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Section 2 Survey of Systems and Equipment

Section 3 Approval documents and data

Section 4 System Requirements

Section 5 Secure Development Lifecycle Requirements

**CHAPTER 4 ADDITIONAL REQUIREMENTS FOR CYBER SECURITY SYSTEM OF SHIPS**

Section 1 General

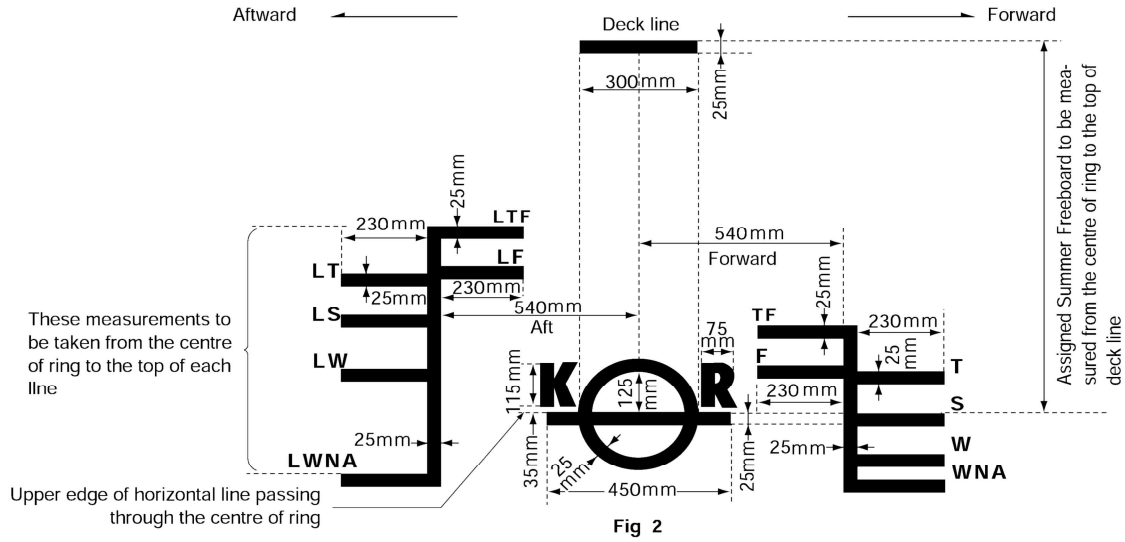
Section 2 Additional Requirements

**Appendix I – Summary of requirements and documents for ships**

## 4. CONVERSION TABLE OF SI UNITS

Quantity	SI Unit	Other Unit	Remarks
mass	kg	t	$1 \text{ t} = 10^3 \text{ kg}$
density (mass density)	$\text{kg}/\text{m}^3$	-	-
moment of inertia	$\text{kg} \cdot \text{m}^2$	-	-
force	N	kgf	$1 \text{ kgf} = 9.81 \text{ N}$
moment (torque)	N-m	kgf-m	$1 \text{ kgf-m} = 9.81 \text{ N-m}$
stress	Pa or $\text{N}/\text{m}^2$	$\text{kgf}/\text{mm}^2$	$1 \text{ kgf}/\text{mm}^2 = 9.81 \text{ N}/\text{mm}^2 = 9.81 \text{ MPa}$
pressure	Pa	$\text{kgf}/\text{cm}^2$ or bar	$1 \text{ kgf}/\text{cm}^2 = 0.981 \text{ bar} = 98.1 \text{ kPa}$
work energy	J	kgf-m	$1 \text{ kgf-m} = 9.81 \text{ J}$
electric potential	J	kW-h	$1 \text{ kW-h} = 3.6 \times 10^6 \text{ J}$
power	W	PS	$1 \text{ PS} = 735.5 \text{ W}$
temperature	K or $^{\circ}\text{C}$	C	$x^{\circ}\text{C} = (x + 273.15) \text{ K}$
quantity of heat	J	cal or kcal	$1 \text{ kcal} = 4.19 \text{ kJ}$
heat flow rate	W	kcal/h	$1 \text{ kcal/h} = 1.16 \text{ W}$
frequency	Hz	-	- rpm = 60 /s
rotational frequency	$\text{s}^{-1}$	$\text{min}^{-1}(\text{rpm})$	$1 \text{ knot} = 1852 \text{ m/h}$
velocity	m/s	knot	$1^{\circ} = \frac{\pi}{180} \text{ rad}$
plane angle	rad	° ; ' ; "	





(4) For Korean flagged vessels which are over 12 m and for domestic voyage, the load line mark is to be as shown in Fig 3 Marking method refers to (2). However, for the vessels navigating solely on lakes and rivers sub-paragraph (5) may be applied.

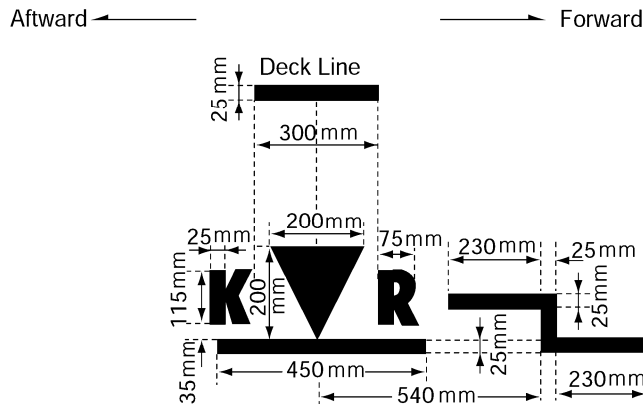


Fig 3

(5) For Korean flagged passenger vessels and dangerous cargo carriers which are less than 12 m in length and for domestic voyage, the load line mark is to be as shown in Fig 4 Marking method refers to (2).

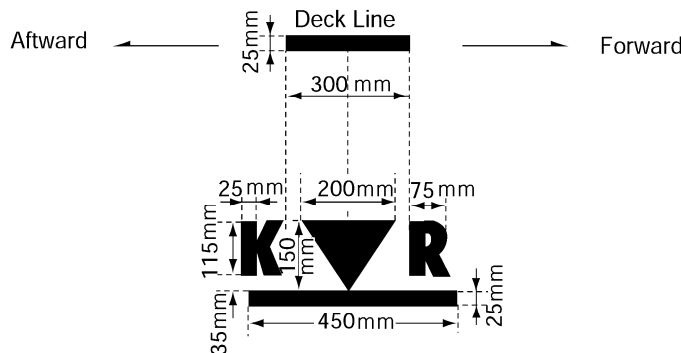


Fig 4

- (6) For Korean flagged fishing vessels, the load line mark is to be as shown in Fig 5. Marking method refers to (2).

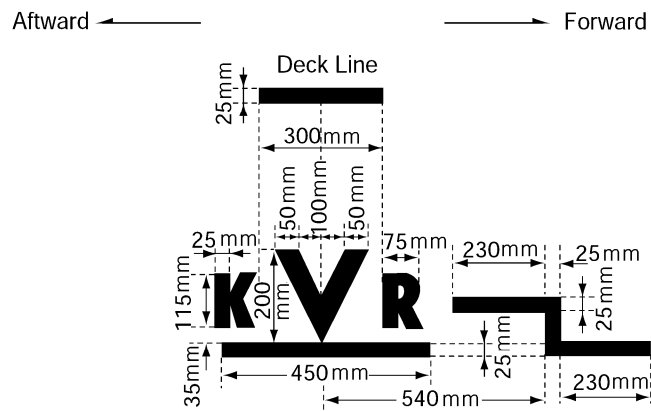


Fig 5



- (9) For high speed craft subject to 2000 HSC Code engaged in international voyage, the load line mark is to be as shown in **Fig 8** Marking method refers to (2).

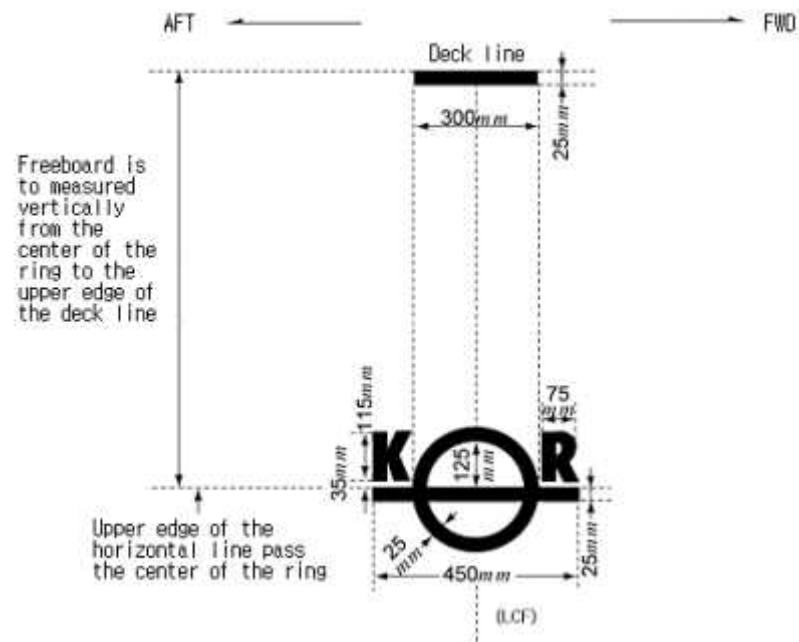


Fig 8

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## INTRODUCTION TO THE CLASSIFICATION TECHNICAL RULES

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