



2021

**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"> - Pt 1 Classification and Surveys (K/E) (2021) - Pt 2 Materials and Welding (K/E) (2021) - Pt 3 Hull Structures (K/E) (2021) - Pt 4 Hull Equipment (K/E) (2021) - Pt 5 Machinery Installations (K/E) (2021) - Pt 6 Electrical Equipment and Control Systems (K/E) (2021) - Pt 7 Ships of Special Service (Ch1–Ch4, Ch7–Ch10) (K/E) (2021) - Pt 7 Ships of Special Service (Ch5, Ch6) (K/E) (2021) - Pt 8 Fire Protection and Fire Extinction (K/E) (2021) - Pt 9 Additional Installations (K/E) (2021) - Pt 10 Hull Structure and Equipment of Small Steel Ships (K/E) (2021) - Pt 11 Common Structural Rules for Bulk Carriers (K/E) (2014) - Pt 12 Common Structural Rules for Double Hull Oil Tankers (K/E) (2014) - Pt 13 Common Structural Rules for Bulk Carriers and Tankers (K/E) (2021) - Pt 14 Structural Rules for Container Ships (K/E) (2021) - Pt 15 Structural Rules for Membrane Type Liquefied Natural Gas Carriers (E) (2021) 	<ul style="list-style-type: none"> - Pt 1 Classification and Surveys (K/E) (2021) - Pt 2 Materials and Welding (K/E) (2021) - Pt 3 Hull Structures (K/E) (2021) - Pt 4 Hull Equipment (K/E) (2020) - Pt 5 Machinery Installations (K/E) (2021) - Pt 6 Electrical Equipment and Control Systems (K/E) (2021) - Pt 7 Ships of Special Service (Ch1–Ch4, Ch7–Ch10) (K/E) (2021) - Pt 7 Ships of Special Service (Ch5, Ch6) (K/E) (2021) - Pt 8 Fire Protection and Fire Extinction (K/E) (2021) - Pt 9 Additional Installations (K/E) (2021) - Pt 10 Hull Structure and Equipment of Small Steel Ships (K/E) (2021) - Pt 13 Common Structural Rules for Bulk Carriers and Tankers (K/E) (2019) - Pt 14 Structural Rules for Container Ships (K/E) (2021)

Rules for Offshore Structures	Guidance for Offshore Structures
<ul style="list-style-type: none"> - Rules for the Classification of Mobile Offshore Units (K/E) (2021) - Rules for the Classification of Mobile Offshore Drilling Units (K/E) (2020) - Rules for the Classification of Fixed Offshore Structures (K/E) (2014) 	<ul style="list-style-type: none"> - Guidance Relating to the Rules for the Classification of Mobile Offshore Units (K/E) (2018) - Guidance Relating to the Rules for the Classification of Mobile Offshore Drilling Units (K/E) (2020) - Guidance for Floating Offshore Production Units (K/E) (2015) - Guidance for Floating Liquefied Gas Storage and Regasification Units (K/E) (2019) - Guidance for Floating Liquefied Gas Production Units (K/E) (2019) - Guidance for OSV (K/E) (2019)

Other Rules	Other Guidances
<ul style="list-style-type: none"> - Rules for the Classification of Steel Barges (K/E) (2021) - Rules for the Classification of Underwater Vehicles (K/E) (2015) - Rules for the Classification of FRP Ships (K/E) (2014) - Rules for the Classification of Floating Docks (K/E) (2020) - Rules for the Classification of High Speed and Light Crafts (K/E) (2020) - Rules for the Classification of Ships Using Low-flashpoint Fuels (K/E) (2021) - Rules for the Towing Survey of Barges and Tugboats (K/E) (2021) - Rules for the Classification of Dredgers (K) (2021) 	<ul style="list-style-type: none"> - Guidance Relating to the Rules for the Classification of Steel Barges (K/E) (2016) - Guidance Relating to the Rules for the Classification of Underwater Vehicles (K/E) (2021) - Guidance Relating to the Rules for the Classification of FRP Ships (K/E) (2014) - Guidance Relating to the Rules for the Classification of Floating Docks (K/E) (2015) - Guidance Relating to the Rules for the Classification of High Speed and Light Craft (K/E) (2020) - Guidance Relating to the Rules for the Classification of Ships Using Low-flashpoint Fuels (K/E) (2021)

	Other Guidances
	<ul style="list-style-type: none"> - Guidance for Approval of Manufacturing Process and Type Approval, Etc. (K/E) (2021) - Guidance for Floating Structures (K/E) (2010) - Guidance for Freight Containers (K/E) (2019) - Guidance for Single Point Mooring (K/E) (2017) - Guidance for Ships Carrying CNG in Bulk (K/E) (2011) - Guidance for WIG Craft (Wing-In-Ground Effect Craft) (K/E) (2019) - Guidance for Recreational Crafts (K/E) (2018) - Guidance for Large Yachts (K/E) (2014) - Guidance for Fuel Cell Systems on Board of Ships (K/E) (2015) - Guidance for Ships for Navigation in Ice (K/E) (2021) - Guidance for Approval of Risk-based Ship Design (K/E) (2015) - Guidance for Assessment of Sloshing Load and Structural Strength of Cargo Containment System (K/E) (2015) - Guidance for LNG Fuel Ready Ships (K/E) (2017) - Guidance on Strength Assessment of Containerships Considering the Whipping Effect (K/E) (2017) - Guidance for Structural Strength Assessment of Pump Tower of LNG Carrier (K/E) (2017) - Guidance for Noise and Vibration (K/E) (2020) - Guidance for Shiplift and Transfer Systems (K/E) (2017) - Guidance for Battery Systems on Board of Ships (K/E) (2021) - Guidance for Maritime Cyber Security System (K/E) (2021) - Guidance for Floating LNG Bunkering Terminal (K/E) (2018) - Guidance for approval of Service Suppliers (K/E) (2021) - Guidance for Autonomous Ships (K/E) (2021) - Guidance for DC Distribution Systems (K/E) (2020)

Other Rules	Other Guidances
	<ul style="list-style-type: none"> - Guidance for Type Approval of Maritime Cyber security (K/E) (2021) - Guidance for Composite Propellers (K/E) (2019) - Guidance for Software Conformity Certification (K/E) (2019) - Guidance for Integrated Software Process Management (K/E) (2021) - Guidance of Heat Transfer Analysis for Ships Carrying Liquefied Gases in Bulk/Ships Using Liquefied Gases as Fuels) (K/E) (2021) - Guidance for Prevention System of Pollution from Ships (K/E) (2021)

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 33 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"

- (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 Other Rules and Other Guidance

The same as 2.3.1

2.3.3 Classification Rules other than 2.3.1 and 2.3.2

- (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
- Section 12 Related Regulations and Surveys
- Section 13 Classification of Other Installations or Equipment
- Section 14 External Audit
- Section 15 Miscellaneous

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
- Section 19 Special Requirements for Ships Subject to Korean Ship Safety Act or Fishing Vessels Act

CHAPTER 3 HULL SURVEYS OF SHIPS SUBJECT TO THE ENHANCED SURVEY PROGRAMME

- Section 1 General
- Section 2 Bulk Carriers
- Section 3 Oil Tankers
- Section 4 Chemical Tankers
- Section 5 Double Hull Oil Tankers
- Section 6 Double Skin Bulk Carriers

PART 2 MATERIALS AND WELDING

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- Section 1 General
- Section 2 Test Specimens and Testing Procedures
- Section 3 Rolled Steels
- Section 4 Steel Tubes and Pipes
- Section 5 Castings
- Section 6 Steel Forgings
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- Section 8 Aluminium Alloys

CHAPTER 2 WELDING

- Section 1 General
- Section 2 Test Specimens and Testing Procedures
- Section 3 Welding work and Inspection
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- Section 5 Welders and Welder Performance Qualification Scheme
- Section 6 Welding Consumables

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- Section 1 Definitions
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- Section 3 Approval of Plans and Documents
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- Section 1 Stems
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- Section 2 Bending Strength
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CHAPTER 4 PLATE KEELS AND SHELL PLATINGS

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- Section 2 Plate Keels
- Section 3 Shell Plating below Strength Deck
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- Section 3 Deck Plating
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- Section 2 Centre Girders and Side Girders
- Section 3 Solid Floors
- Section 4 Bottom Longitudinals
- Section 5 Inner Bottom Plating, Margin Plates and Bottom Shell Plating
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- Section 7 Open Floors
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- Section 5 Cantilever Beams

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- Section 1 General
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CHAPTER 16 SUPERSTRUCTURES

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CHAPTER 18 MACHINERY SPACES AND ENGINE CASINGS

- Section 1 General
- Section 2 Main Engine Foundation
- Section 3 Construction of Boiler Rooms
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- Section 1 General

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- Section 1 General
- Section 2 Rudder Force
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- Section 4 Rudder Strength Calculation
- Section 5 Rudder Stocks
- Section 6 Rudder Plates, Rudder Frames and Rudder Main Pieces
- Section 7 Couplings between Rudder Stocks and Main Pieces
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- Section 9 Bearings of Rudder Stocks and Pintles
- Section 10 Rudder Accessories
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CHAPTER 2 HATCHWAYS AND OTHER DECK OPENINGS

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- Section 2 Design Load
- Section 3 Hatch cover strength criteria
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- Section 5 Hatch cover details – Closing Arrangement, Securing Devices and Stoppers
- Section 6 Hatch ways closed by Portable Hatch Cover and weathertightened by Tarpaulins and Battens
- Section 7 Miscellaneous Openings

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- Section 1 Bow Doors and Inner Doors
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- Section 1 Bulwarks and Guardrails
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- Section 3 Side Scuttles, Rectangular Windows and Skylights
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CHAPTER 7 CEMENTING AND PAINTING

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- Section 4 Spare Parts and Tools

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- Section 5 Bulkheads in Cargo Oil Spaces
- Section 6 Relative Deformation of Wing Tanks
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- Section 1 General
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- Section 5 Relative deformation of wing tanks
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- Section 9 Hatch Covers and Hatch Coamings of Cargo Holds
- Section 10 Longitudinal Strength of Hull Girder in Flooded Condition for Bulk Carriers
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- Section 12 Evaluation of Scantlings of Corrugated Transverse Watertight Bulkheads in Bulk Carriers Considering Hold Flooding
- Section 13 Requirements for the Fitting of a Forecastle for Bulk Carriers, Ore Carriers and Combination Carriers
- Section 14 Water Level Detection & Alarm and Drainage & Pumping Systems for Bulk Carriers and Single Hold Cargo Ships
- Section 15 Supplementary Provisions for Carriage of Liquid in Holds
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- Section 5 Process Pressure Vessels and Liquid, Vapour, and Pressure Piping Systems
- Section 6 Materials of Construction and Quality Control
- Section 7 Cargo Pressure/Temperature Control
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Appendix Part A Approval of Service Suppliers listed in IACS UR Z17

1. Firms engaged in thickness measurements on ships or mobile offshore units (Z17 Annex1-1)
2. Firms engaged in tightness testing of closing appliances such as hatches, doors etc. with ultrasonic equipment(Z17 Annex 1-2)
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)
4. Firms engaged in inspection and maintenance of fire extinguishing equipment & systems and self contained breathing apparatus(Z17 Annex 1-4 & Annex 1-7)
5. Firms engaged in servicing life saving appliances(Z17 Annex 1-5 & Annex1-13)
6. Firms engaged in inspections and testing of radio communication equipment (Z17 Annex 1-6)
7. Firms engaged in examination of Ro-Ro ships bow, stern, side and inner doors (Z17 Annex 1-8)
8. Firms engaged in annual performance testing of Voyage Data Recorders(VDR) and simplified Voyage Data Recorders(S-VDR)(Z17 Annex 1-9)
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)
10. Firms engaged in sound pressure level measurements of public address and general alarm systems on board ships(Z17 Annex 1-11)
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)
12. Firms engaged in measurements of Noise level Onboard Ships(Z17 Annex 1-14)
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)
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)
15. Firms engaged in cable transit seal systems inspection of on ships and mobile offshore units(Z17 Annex 1-17)

Appendix Part B Approval of Service Suppliers listed in IACS UR W35

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

Appendix Part C Approval of Service Suppliers not listed in IACS UR Z17

1. Firms engaged in vibration measurement in relation to habitability of ship
2. Firms engaged in visual and/or sample checks for preparation of inventory of hazardous materials(IHM)

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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)	kg/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	$1 \text{ kgf} \cdot \text{m} = 9.81 \text{ N} \cdot \text{m}$
stress	Pa or N/m^2	kgf/ mm^2	$1 \text{ kgf}/\text{mm}^2 = 9.81 \text{ N}/\text{mm}^2 = 9.81 \text{ MPa}$
pressure	Pa	kgf/ cm^2 or bar	$1 \text{ kgf}/\text{cm}^2 = 0.981 \text{ bar} = 98.1 \text{ kPa}$
work energy	J	kgf·m	$1 \text{ kgf} \cdot \text{m} = 9.81 \text{ J}$
electric potential	J	kW·h	$1 \text{ kW} \cdot \text{h} = 3.6 \times 10^6 \text{ J}$
power	W	PS	$1 \text{ PS} = 735.5 \text{ W}$
temperature	K or °C	C	$x \text{ °C} = (x + 273.15) \text{ K}$
quantity of heat	J	cal or kcal	$1 \text{ kcal} = 4.19 \text{ kJ}$
heat flow rate	W	kcal/h	$1 \text{ kcal}/\text{h} = 1.16 \text{ W}$
frequency	Hz	-	-
rotational frequency	s^{-1}	$\text{min}^{-1}(\text{rpm})$	$\text{rpm} = 60 / \text{s}$
velocity	m/s	knot	$1 \text{ knot} = 1852 \text{ m}/\text{h}$
plane angle	rad	° ; ' ; "	$1^\circ = \frac{\pi}{180} \text{ rad}$

5. LOAD LINE MARKS

(1) Assignment of Load Line

The Society is authorized to assign Load Lines to vessels registered by the Korean Government and other Governments.

(2) Load Line Mark for Ocean Going Vessels without Timber Load Line

The centre of the ring is to be placed on each side of the ship at the middle of the length as defined in the International Convention on Load Lines, 1966. The ring, lines and letters are to be painted in white or yellow on a dark ground or in black on a light ground. They are also to be permanently marked on the sides of the ship as shown in **Fig 1**.

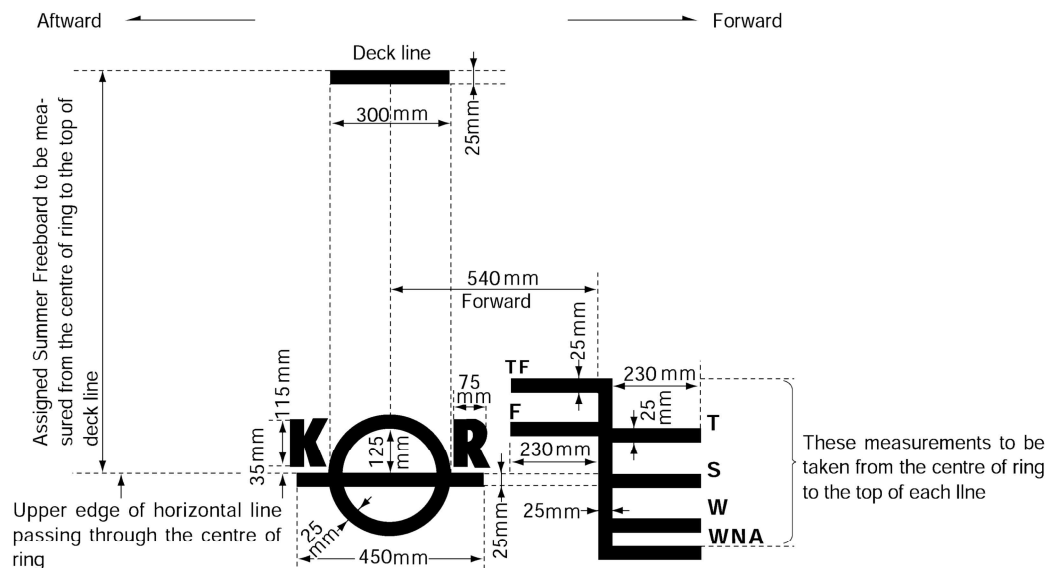


Fig 1

(3) Load Line Mark for Ocean Going Vessels with Timber Load Line

The centre of the ring is to be placed on each side of the ship at the middle of the length as defined in the International Convention on Load Lines, 1966. The ring, lines and letters are to be painted in white or yellow on a dark ground or in black on a light ground. They are also to be permanently marked on the sides of the ship as shown in **Fig 2**.

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

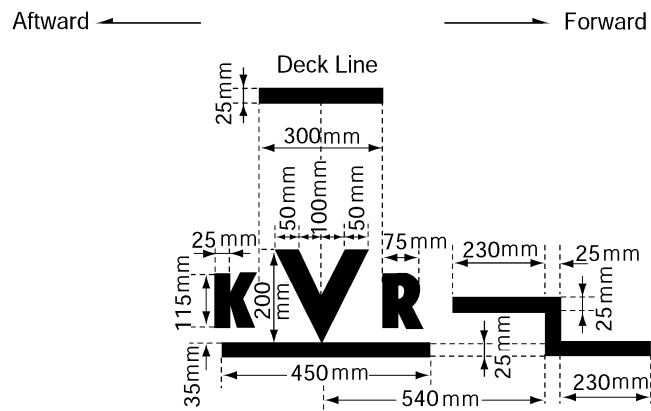


Fig 5

- (7) For Korean flagged high speed crafts which are less than 12 m in length and for domestic voyage, the load line mark is to be as shown in Fig 6 Marking method refers to (2).

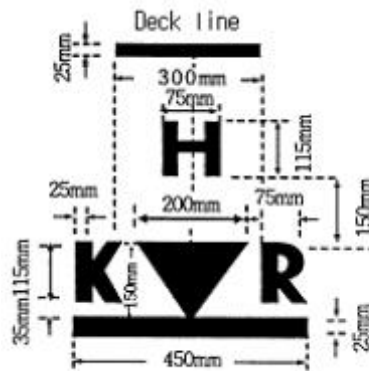


Fig 6

- (8) For Korean flagged high speed crafts which are over 12 m in length and for domestic voyage, the load line mark is to be as shown in Fig 7 Marking method refers to (2).

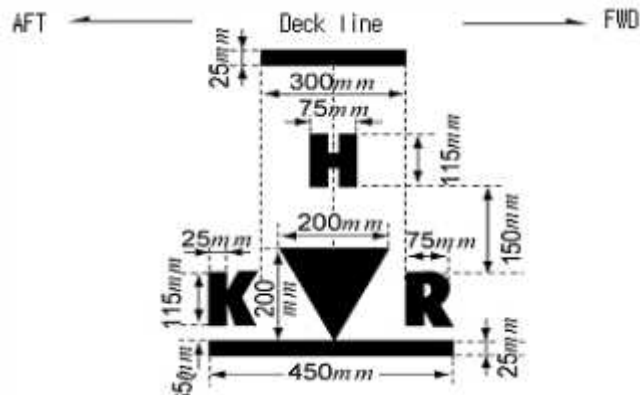


Fig 7

- (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).

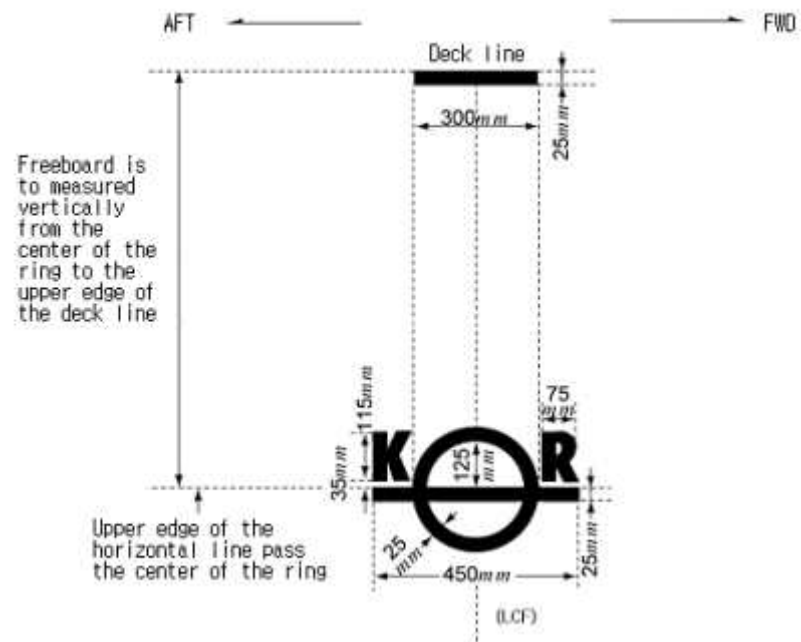


Fig 8

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