

2017

Introduction to the Classification Technical Rules

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1. LIST OF CLASSIFICATION TECHNICAL RULES

	RULES			GUIDANCE	
	Rules for	Rules for the Classification of Steel Ships		· Guidance Relating to the Rules for the Classification of Steel Ships	
	- Pt 1	Classification and Surveys (K/E) (2017)	- Pt 1	Classification and Surveys (K/E) (2017)	
	- Pt 2	Materials and Welding (K/E) (2017)	- Pt 2	Materials and Welding (K/E) (2017)	
	- Pt 3	Hull Structures (K/E) (2017)	- Pt 3	Hull Structures (K/E) (2017)	
	- Pt 4	Hull Equipment (K/E) (2017)	- Pt 4	Hull Equipment (K/E) (2017)	
	- Pt 5	Machinery Installations (K/E) (2017)	- Pt 5	Machinery Installations (K/E) (2017)	
	- Pt 6	Electrical Equipment and Control Systems (K/E) (2017)	- Pt 6	Electrical Equipment and Control Systems (K/E) (2017)	
	- Pt 7	Ships of Special Service (Ch1-Ch4, Ch7-Ch10) (K/E) (2017)	- Pt 7	Ships of Special Service (Ch1-Ch4, Ch7-Ch10) (K/E)	
	- Pt 7	Ships of Special Service (Ch5, Ch6) (K/E) (2017)		(2017)	
	- Pt 8	Fire Protection and Fire Extinction (K/E) (2017)	- Pt 7	Ships of Special Service (Ch5, Ch6) (K/E) (2017)	
	- Pt 9	Additional Installations (K/E) (2017)	- Pt 8	Fire Protection and Fire Extinction (K/E) (2017)	
	- Pt 10	Hull Structure and Equipment of Small Steel Ships	- Pt 9	Additional Installations (K/E) (2017)	
		(K/E) (2017)	- Pt 10	Hull Structure and Equipment of Small Steel Ships (K/E)	
	- Pt 11	Common Structural Rules for Bulk Carriers (K/E) (2014)		(2017)	
	- Pt 12	Common Structural Rules for Double Hull Oil Tankers	- Pt 13	Common Structural Rules for Bulk Carriers and	
		(K/E) (2014)		Tankers (K/E) (2017)	
	- Pt 13	Common Structural Rules for Bulk Carriers and			
		Tankers (K/E) (2017)			
	Rules for Offshore Structures - Rules for the Classification of Mobile Offshore Units (K/E) (2017)		Guidance	for Offshore Structures	
			- Guidance Relating to the Rules for the Classification of Mobile Offshore Units (K/E) (2017)		
	- Rules for the Classification of Fixed Offshore Structures (K/E)			- Guidance Relating to the Rules for the Classification of Mobile	
	(2014) - Rules for the Classification of Mobile Offshore Drilling Units (K/E) (2017)		Offshore Drilling Units (K/E) (2017) - Guidance for Floating Offshore Production Units (K/E) (2015) - Guidance for Floating Liquefied Gas Units (K/E) (2017)		
			- Guidano	ce for OSV (K/E) (2015)	
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RULES	GUIDANCE
Other Rules - Rules for the Classification of Steel Barges (K/E) (2016) - Rules for the Classification of Dredgers (K) (2015) - 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) (2015)	Other Guidance - 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) (2015) - Guidance Relating to the Rules for the Classification of FRP Ships
Rules for the Classification of High Speed and Light Crafts (K/E) (2015) Rules for the Towing Survey of Barges and Tugboats (K/E) (2014)	 (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) (2015) Guidance for Approval of Manufacturing Process and Type Approval, Etc. (K/E) (2017) Guidance for Floating Structures (K/E) (2010)
	 Guidance for Freight Containers (K/E) (2014) Guidance for Single Point Mooring (K/E) (2017) Guidance for Ships Carrying CNG in Bulk (K/E) (2011) Guidance for WIG ships (Wing-In-Ground Effect Ships) (K/E) (2016) Guidance for Recreational Crafts (K/E) (2013) Guidance for Large Yachts (K/E) (2014) Guidance for Gas-fuelled Ships (K/E) (2016) Guidance for Fuel Cell Systems on Board of Ships (K/E) (2015) Guidance for Ships for Navigation in Ice (K/E) (2017)
	 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 (2017) Guidance for Noise and Vibration (2017)

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", which means all rules for the classification of ships, offshore installations and related equipment, etc., and "Guidance", which means rules prepared with the purpose of providing guidelines for the treatment of detailed contents during surveys carried out in accordance with the requirements in Rules. The list of Classification Technical Rules is given in **1.**
- **2.1.3** Where the formulated or revised contents of classification rules are not too voluminous, or it is anticipated that the revised contents will become effective early, Circular Letter shall be published for users to know its contents easily, instead of printing complete volumes.

2.2 User's Guide

2.2.1 Enforcement

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

2.2.2 Format

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

"Rules for Offshore Structures" is composed of 3 kinds and "Guidance for Offshore Structures" is composed of 4 kinds.

"Other Rules" is composed of 7 kinds and "Other Guidance" is composed of 19 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. Φ

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 and Duties of Surveyors
- 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 Alteration Survey
- Section 12 Survey of Ships Carrying Dangerous Goods and Other Special Cargoes
- Section 13 Additional Installations Survey
- Section 14 Hull Surveys for General Dry Cargo Ships
- Section 15 Hull Surveys for Liquefied Gas Carriers
- Section 16 Survey Requirements for Shell and Inner Doors, Etc. of RoRo Ships
- Section 17 Additional Requirements
- Section 18 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
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- Section 7 Copper and Copper Alloy
- Section 8 Aluminium Alloys

CHAPTER 2 WELDING

- Section 1 General
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- Section 1 General
- Section 2 Plate Keels
- Section 3 Shell Plating below Strength Deck
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- Section 5 Side Plating in way of Superstructure
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- Section 1 General
- Section 2 Effective Sectional Area of Strength Deck
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- Section 1 General
- Section 2 Centre Girders and Side Girders
- Section 3 Solid Floors
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- Section 8 Construction of Strengthened Bottom Forward

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- Section 6 Hatch ways closed by Portable Hatch Cover and weathertighted by Tarpaulins and Battens
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- Section 1 Application and Implementation
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- Section 3 Strength Requirements for Fore Deck Fittings and Equipment

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- 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 7 Cargo Pressure/Temperature Control
- Section 8 Vent Systems for Cargo Containment
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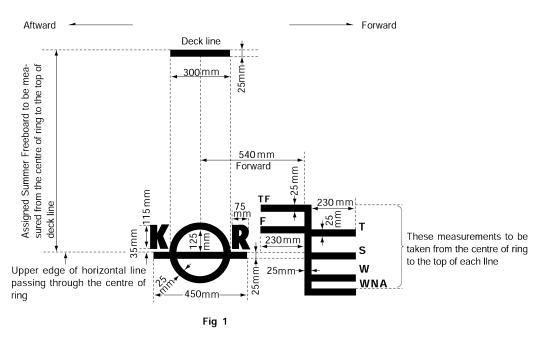
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4. CONVERSION TABLE OF SI UNITS

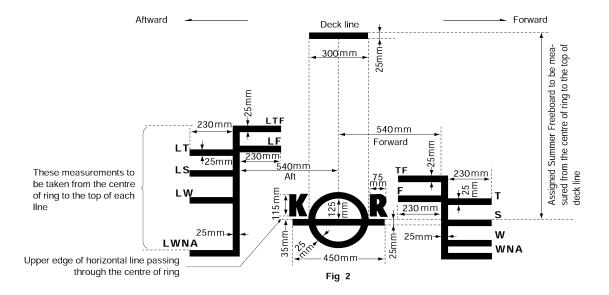
Quantity	SI Unit	Other Unit	Remarks
mass	kg	t	$1 t = 10^3 kg$
density (mass density)	kg/m³	-	-
moment of inertia	kg-m ²	-	-
force	N	kgf	1 kgf = 9.81 N
moment (torque)	N - m	kgf-m	1 kgf-m = 9.81 N-m
stress	Pa or N/m ²	kgf/mm ²	$1 \text{ kgf/mm}^2 = 9.81 \text{ N/mm}^2 = 9.81 \text{ MPa}$
pressure	Pa	kgf/cm ² or bar	$1 \text{ kgf/cm}^2 = 0.981 \text{ bar} = 98.1 \text{ kPa}$
work energy	J	kgf-m	1 kgf-m = 9.81 J
electric potential	J	kW - h	$1 \text{ kW-h} = 3.6 \times 10^6 \text{ J}$
power	W	PS	1 PS = 735.5 W
temperature	K or ℃	C	$x ^{\circ}\text{C} = (x + 273.15) \text{K}$
quantity of heat	J	cal or kcal	1 kcal = 4.19 kJ
heat flow rate	W	kcal/h	1 kcal/h = 1.16 W
frequency	Hz	-	-
rotational frequency	s^{-1}	$\min^{-1}(\text{rpm})$	rpm = 60 / s
velocity	m/s	knot	1 knot = 1852 m/h
			$1^{\circ} - \frac{\pi}{rad}$
plane angle	rad	° ', ''	$1^{\circ} = \frac{\pi}{180} \text{rad}$

5. LOAD LINE MARKS

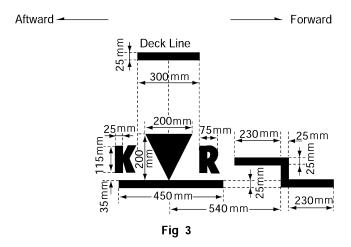
- (1) Assignment of Load Line
 - The Society is authorized to assign Load Lines to vessels registered by the Korean Government and other Governments.
- (2) Load Line Mark for Ocean Going Vessels without Timber Load Line
 The centre of the ring is to be placed on each side of the ship at the middle of 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.**



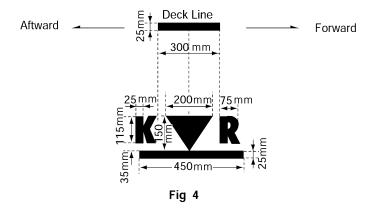
(3) Load Line Mark for Ocean Going Vessels with Timber Load Line
The centre of the ring is to be placed on each side of the ship at the middle of the length as
defined in the International Convention on Load Lines, 1966. The ring, lines and letters are to
be painted in white or yellow on a dark ground 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.**



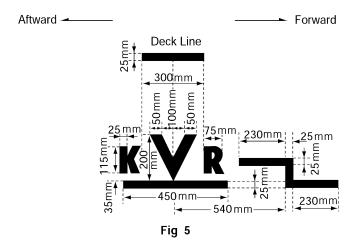
(4) For Korean flagged vessels which are over 12 m and for domestic voyage, the load line mark is to be as shown in **Fig 3** Marking method refers to (2). However, for the vessels navigating solely on lakes and rivers sub-paragraph (5) may be applied.



(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).



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



(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).

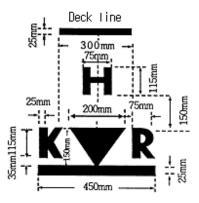
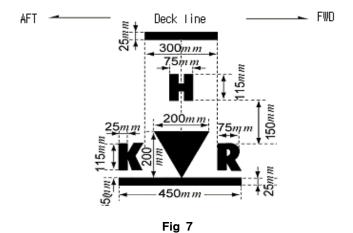


Fig 6

(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).



(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).

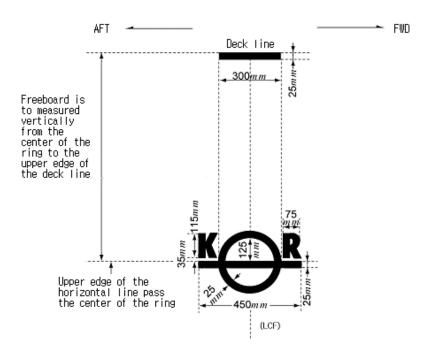


Fig 8

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