

2010

Guidance for Floating Structures

KOREAN REGISTER OF SHIPPING



2010

Guidance for Floating Structures

GC-02-E

KOREAN REGISTER OF SHIPPING

APPLICATION OF "Guidance for Floating Structures"

- 1. Unless expressly specified otherwise, the requirements in the Guidance apply to Floating Structures constructed on or after 1 July 2010.
- 2. The amendments to the Rules for 2009 edition and their effective date are as follow;

Effective Date : 1 July 2010

Chapter 4 MOORING AND ANCHORINGS, ETC.

Section 1 Standard for Ship's Facilities

- 101. has been amended.
- 102.1. has been amended.

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CHAPTER 1 GENERAL

Section 1 General

101. Application

This Guidance is to apply to the floating structures(except those permanently fixed on the water)(hereinafter referred to as "floating structures"), which have a carrying capacity of not less than 13 persons other than employees, such as floating hotel, floating restaurant and floating performing place, etc. intended to be registered and classed.

102. Application of related requirements

- 1. The requirements not specified in this Guidance are to be in accordance with the Rules for the Classification of Steel Ships(hereinafter referred to as "the Rules").
- 2. The floating structures of unusual construction, which are considered by the Society that it is not practicable or not applicable to apply the requirements of this Guidance from the view point of its construction, are to be at the discretion of the Society in spite of the requirements specified in this Guidance.
- **3.** The Society may accept the reports and/or certificates, etc. made by others considered appropriate by the Society in spite of the requirements specified in this Guidance, where it is acceptable by the Society to apply the related laws of the Administration such as the Building Act of its flag state, etc. because it is not practicable or not applicable to apply the requirements of this Guidance to the parts of floating structures such as its hotel, restaurant, performing place, etc.

103. Equivalence

Special equipment, which is not appropriate to apply the requirements of this Guidance or not specified in this Guidance, may be accepted by the Society provided that the Society is satisfied that such equipment is equivalent to or above those complying with the requirements of this Guidance.

104. Classification

The Classification is to be in accordance with the requirements specified in Pt 1 of the Rules.

105. Class notations

The class notations assigned to the floating structures classed with the Society are to be in accordance with the requirements specified in Pt 1, Ch 1, 201. of the Rules. However, the notation "Floating Structure" shall be assigned as a ship type notation. \downarrow

CHAPTER 2 CLASSIFICATION SURVEYS

Section 1 General

101. General

The classification surveys of floating structures, except where specially required in this Guidance, are to comply with the requirements specified in Pt 1, Ch 2 of the Rules.

Section 2 Periodical Surveys

201. General

To maintain the classification after Classification Survey, the floating structures are to be subject to the Intermediate Survey and Special Survey, and the due range of each survey is in accordance with the requirements specified in **Pt 1, Ch 2** of the Rules.

202. Intermediate Survey

- 1. Intermediate Survey is to be in accordance with the requirements specified in Pt 1, Ch 2, 302. and 303. of the Rules.
- 2. At the Intermediate Survey, the surveys required in Pt 1, Ch 2, 603. of the Rules are to be carried out in drydock or on a slipway. However, an in-water survey deemed appropriate by the Society may be considered as equivalent.

203. Special Survey

Special Survey is to be in accordance with the requirements specified in Pt 1, Ch 2, Sec 4 and Sec 5-1 of the Rules, However, an in-water survey deemed appropriate by the Society may be considered as equivalent in lieu of the survey to be carried out in drydock or on a slipway. \downarrow

CHAPTER 3 HULL STRUCTURES

Section 1 Materials and Structures

101. Materials and structures

Materials and structures of floating structures are to comply with the relevant Chapter of the Rules and Other Technical Rules. For floating structures having unconventional construction, structural analysis may be accepted where it is difficult to apply to this Guidance.

102. Local strength

Local strength of floating structures is to comply with "Rules for the Classification of Steel Barges".

103. Corrosion additions

The corrosion additions of floating structures are to comply with Pt 11, Ch 3, Sec 3 of the Rules.

104. Corrosion protection measures

The steels used for structures are to be coated with coating materials of good quality or are applied with corrosion protection measures having equivalent quality. However, special consideration is to be given to the corrosion protection, where deemed necessary by the Society. \downarrow

CHAPTER 4 MOORING AND ANCHORING, ETC.

Section 1 Standard for Ship's Facilities

101. Assessment of total resistances

Total resistance (R)(kg) of floating structures is to be determined by using each mooring method, such that most severe condition can be considered when mooring force is calculated in accordance with the following R_{aL} , R_{aT} , R_t , R_{sL} and R_{sT} .

R_{aL} and R_{aT} : t	he value obtained from the following
For longitu	Idinal wind $\therefore R_{aL} = K_{aL} \times A_a \times V_a^2$ (kg)
For transv	erse wind $\therefore R_{aT} = K_{aT} \times A_a \times V_a^2$ (kg)
K_{aL}	: 0.0429 (longitudinal wind pressure factor) (kg \cdot sec ² /m ⁴)
K_{aT}	: 0.0735 (lateral wind pressure factor) (kg \cdot sec ² /m ⁴)
$A_a^{a_1}$: projected area on the wind directional section above the load line
(m^2)	
V_a	: relative wind speed (m/s) (normal: min. 15 m/s, typhoon: min. 44 m/s.
	However, maximum wind speed of the data from Meteorological
	Administration may be used.)

- R_t : the value obtained from the following
 - $R_t = 0.1212 A_t \{ (V_t + V_s)^2 + 0.330 (V_t + V_s) \}$ (kg) A_t
 - : surface area below the waterline (m²)
 - V_t V_s : current speed (m/s)
 - : moving speed of the structures (m/s)

 R_{sL} and R_{sT} : the value obtained from the following For longitudinal fluid flow : $R_{sL} = 0.5 \cdot \rho \cdot C_{bd} \cdot A_s \cdot (V_t + V_s)^2$ (kg) For lateral fluid flow : $R_{sT} = 73.2 A_s \cdot (V_t + V_s)^2$ (kg) ρ : water density (sea water : 104.5 kg $\cdot \sec^2/m^4$, fresh water : 102.0 kg • \sec^2/m^4) A_s: projected area on direction of fluid flow below the load line of the structure (m^2)

- $V_t V_s$: current speed (m/s)
- : moving speed of the structures (m/s)
- C_{bd} : the value according to the geometry of bow, as given in Table 4.1.1

L_e/d V_t/\sqrt{Lg}	0	1	2	3	4	5	6	7
0.08	0.710	0.245	0.150	0.117	0.106	0.100	0.098	0.096
0.10	0.755	0.260	0.160	0.128	0.111	0.107	0.103	0.102
0.12	0.805	0.280	0.180	0.138	0.121	0.113	0.108	0.105
0.14	0.850	0.305	0.200	0.152	0.131	0.122	0.115	0.111
0.16	0.905	0.325	0.225	0.165	0.144	0.131	0.122	0.117
0.18	0.960	0.380	0.249	0.181	0.156	0.142	0.130	0.120
0.20	1.025	0.455	0.285	0.201	0.170	0.154	0.140	0.132
0.22	1.120	0.550	0.335	0.222	0.187	0.168	0.153	0.141
0.24	1.230	0.670	0.400	0.258	0.208	0.187	0.170	0.156
(NOTES)								
g : gravity acceleration (9.8 m/sec ²)								

Table 4.1.1 Resistance factor, C₁



102. Standard and provisions for anchor, etc.

- 1. The floating structures are to be provided with anchors, anchor chains, etc. of which strength are not less than total resistance according to 101. In this case, safety factor, tensile force acting on the anchor chain and mass of anchor are as follows:
 - (1) Safety factor is to be not less than 4.
 - (2) Tensile force(T_c) acting on the anchor chain is to be obtained from the following formula. However, inclined angle of anchor chain on direction of total resistance should be considered when necessary to be considered.

 $T_c = R/\cos\theta$ (θ : inclined angle of anchor chain on direction of total resistance in horizontal plane)

(3) Mass of anchor is to be obtained from the following formula:

$W = W_a \div 0.869$

 W_a : mass of anchor in the underwater, as obtained from following formula:

 $W_{\!a} = P - K_{\!c} \! \times L_{\!c} \! \times \ W_{\!c} / K_{\!a}$

- P: the value multiplying the tensile force(T_c) of the anchor chain by the safety factor. When there are provided more than one anchor, the value divided by number of anchors
- L_c : length of anchor chain
- W_c : mass of 1 meter of anchor chain under water, to be taken the value multiplying the mass of anchor chain in the air by 0.869.
- K_a and K_c : holding power factor of anchor and anchor chain, as given in Table 4.1.2

Туре	clay	silt	sandy soil	sand	coarse sand
K_{a}	2	2	2	3~4	3~4
K_{c}	0.6	0.6	-	0.75	0.75

Table 4.1.2 Holding power factor

(4) Tensile force(T_r) acting on the mooring rope is to be taken from following formula:

 $T_r = R/\cos\theta$ (θ : inclined angle of the mooring rope on direction of total resistance in horizontal plane)

(5) The specification, etc. of the wire rope and fibre rope are to be given in Table 4.1.3 to Table 4.1.6.

- 2. The floating structures are to be provided with more than two anchors and anchors and anchor chains are to be capable of sustaining total resistance specified in 101.
- **3.** Where stock anchors are used, the mass of anchor excluding the stock may be 0.8 times the mass of stockless anchor.
- **4.** Where anchor having the holding power of 2 times of stockless anchor is used, the mass of anchor may be 0.75 times the mass of stockless anchor.
- **5.** The anchor providing in forward direction are linked with anchor chains and the length of holding area of chains is to be more than 3 shackles. The length of each chain linked anchor is to be more than the sum length of catenary part and holding part.
- 6. The anchors to hold a lateral position of structures are to be linked by chains.

103. Anchoring Arrangements

For the floating structures having an anchor of more than 150 kg, appropriate anchoring arrangements are to be provided. However, for the floating structures which are not maneuvering except repairing or deteriorating weather conditions, etc, it may not be provided.

104. Mooring Arrangements

The requirements and types of mooring arrangements of floating structures are to comply with Pt 4, Ch 10 of the Rules.

105. Towing Arrangements

The towing arrangements of floating structures are to comply with Pt 3 in "Rules for the Towing Survey of Barges and Tugboats". However, for the floating structures which are not maneuvering except repairing or deteriorating weather conditions, etc, it may not be applied.

Grade		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 21
Sectional view								
	Number of wire	7	12	19	24	30	37	36
Composi	Number of strands	6	6	6	6	6	6	6
lion	Fibre core	Centre	Centre and Centre of strand	Centre	Centre and Centre of strand	Centre and Centre of strand	Centre	Centre
Composition mark		(6×7)	(6×12)	(6×19)	(6×24)	(6×30)	(6×37)	(6×WS(36))

Table 4.1.3 Grades of steel wire rope

Grade	No. 1 No. 2 N		No	o. 3	No	o. 4	No. 5		No. 6		No. 21			
Composi t i o n mark	(6	×7)	(6>	(12)	(6>	(19)	(6>	24)	(6>	(30)	(6>	(37)	(6×W	′S(36))
Diamete r of steel wire rope (mm)	Brea king test load (kN)	Mass per metre in length (kg)												
10 12 14 16 18	52.4 75.4 103 134 170	0.371 0.534 0.727 0.950 1.20	33.3 48.0 65.3 85.2 108	0.273 0.393 0.535 0.699 0.885	47.9 71.6 97.4 127 161	0.364 0.524 0.713 0.932 1.18	45.5 65.5 89.1 117 147	0.332 0.478 0.651 0.850 1.08	41.1 59.1 80.5 105 133	0.310 0.446 0.607 0.793 1.00	48.9 70.5 96.2 126 159	0.359 0.517 0.704 0.920 1.16	50.5 72.8 99.0 129 164	0.396 0.570 0.776 1.01 1.28
20 22 24 26 28	210 253 302 354 411	1.48 1.80 2.14 2.51 2.91	133 161 192 225 261	1.09 1.32 1.57 1.85 2.14	199 240 286 336 389	1.46 1.77 2.10 2.47 2.85	181 221 262 308 357	1.33 1.61 1.91 2.24 2.60	164 199 236 278 322	1.24 1.50 1.79 2.10 2.43	195 237 281 330 382	1.44 1.74 2.07 2.43 2.82	202 244 291 341 396	1.58 1.92 2.28 2.68 3.10
30 32 34 36 38	472 536 605 679 756	3.34 3.80 4.29 4.81 5.36	300 341 385 432 481	2.46 2.80 3.16 3.54 3.94	447 509 575 644 718	3.28 3.73 4.21 4.72 5.26	410 466 526 589 657	2.99 3.40 3.84 4.30 4.79	369 421 475 533 593	2.79 3.17 3.58 4.02 4.48	439 501 566 634 707	3.23 3.68 4.16 4.66 5.19	454 517 583 654 730	3.56 4.06 4.58 5.13 5.72
40 42 44 46 48	838	5.93	533	4.37	795 877 963 1050 1150	5.82 6.42 7.05 7.70 8.39	728 802 881 963 1050	5.31 5.86 6.43 7.03 7.65	657 725 794 869 945	4.95 5.47 6.00 6.56 7.14	782 863 947 1040 1130	5.75 6.34 6.96 7.61 8.28	808 890 978 1070 1140	6.34 6.99 7.67 8.38 9.12
50 52 54 56 58					1250	9.10	1150 1230 1320 1420 1530	8.30 8.98 9.68 10.4 11.2	1020 1110 1200 1280 1380	7.74 8.38 9.04 9.71 10.4	1230 1320 1420 1530 1650	8.98 9.73 10.5 11.3 12.1	1260 1360 1470 1590 1700	9.90 10.7 11.5 12.4 13.3
60 62 65							1640 1750 1920	12.0 12.8 14.0	1470 1580 1740	11.1 11.9 13.1	1760 1880 2070	12.9 13.8 15.2	1810 1940 2140	14.3 15.2 16.7

Table 4.1.4 Masses and breaking test loads for steel wire ropes

		-	
	Kind of fibre rop	е	Filament (material)
	Hemp rope		Manila hemp
S	Vinylon rope	Grade 1 Grade 2	Vinylon
ynthetic	Polyethylene rope	Grade 1 Grade 2	Polyethylene
fibre	Polyester rop)e	Polyester
e rope	Polypropylene rope	Grade 1 Grade 2	Polypropylene
	Polyamide ro	pe	Polyamide

Table 4.1.5 Kind of fibre ropes

Ch 4

emp pe ⁽¹⁾ Viny Grade 1 .06 9.32 .90 13.4 2.1 17.0	(lon ⁽¹⁾ Grade 2	Polyeth Grade 1	vlene ⁽²⁾	Polyester	Polyprop	ovlene ⁽²⁾	Polyamide
Grade 1 .06 9.32 .90 13.4	Grade 2	Grade 1			1	- /	1)
.06 9.32 .90 13.4	15.7		Grade 2	1)	Grade 1	Grade 2	
3.1 17.9 6.9 22.9 1.0 28.6	13.7	9.71	12.7	15.6	10.8	12.7	18.1
	21.8	13.9	17.7	22.0	15.7	17.7	27.5
	28.4	18.6	23.5	29.2	20.6	23.5	36.6
	36.3	23.8	29.4	37.5	26.5	29.4	46.9
	45.1	29.7	37.3	46.7	32.4	37.3	58.3
5.6 34.8 0.5 41.6 5.9 48.8 1.6 56.7 7.8 65.1	54.9	36.1	44.1	56.8	39.2	44.1	70.9
	65.7	43.1	54.9	67.8	47.1	54.9	84.6
	77.5	50.7	63.7	79.6	54.9	63.7	100
	89.2	58.8	73.5	92.4	63.7	73.5	116
	103	67.5	83.4	106	73.5	83.4	132
4.374.01.283.52.399.05.412719157	117	76.8	97.1	121	83.4	97.1	151
	131	86.5	108	136	94.1	108	170
	155	102	127	161	111	127	201
	198	131	164	206	142	164	258
	247	163	203	260	177	203	321
44 191 73 228 :03 269 :35 312 :71 358	300	198	250	312	214	250	390
	358	237	294	373	255	294	466
	421	279	348	438	300	348	547
	487	324	402	508	348	402	635
	559	371	461	583	399	461	729
07 407 .46 459 .87 514 .31 571 .77 632 .25 694	635	422	525	663	453	525	829
	716	476	593	747	511	593	935
	801	533	667	837	572	667	1050
	895	592	735	931	635	735	1170
	981	655	814	1030	702	814	1280
	1080	721	897	1140	772	897	1410
6.9 1.0 5.6 0.5 5.9 1.6 7.8 4.3 1.2 2.3 5.4 19 44 73 2.35 2.71 307 346 387 331 177 525	22.9 28.6 34.8 41.6 48.8 56.7 65.1 74.0 83.5 99.0 127 157 191 228 269 312 358 407 459 514 571 632 694	22.9 36.3 28.6 45.1 34.8 54.9 41.6 65.7 48.8 77.5 56.7 89.2 65.1 103 74.0 117 83.5 131 99.0 155 127 198 157 247 191 300 228 358 269 421 312 487 358 559 407 635 459 716 514 801 571 895 632 981 694 1080	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				

Table 4.1.6 Breaking test load for fibre ropes (unit : kN)

(NOTES)

⁽¹⁾ Breaking load at room temperature in dried condition

⁽²⁾ Breaking load at room temperature after having been immersed in warm water at 35 ± 2 °C for more than 30 minutes

Section 2 Load Lines, etc.

201. Load lines

The load lines marked on floating structures are to comply with the National Regulations of the nation to which the ship is registered or to be registered.

202. Stability

The stability calculations of floating structures are to comply with the National Regulations of the nation to which the ship is registered or to be registered. Φ



CHAPTER 5 FIRE PROTECTION

Section 1 General

101. Usage limit of combustible materials, etc.

Usage limit of combustible materials used in the exposed surfaces on board should comply with the requirements of Pt 8, Ch 2, 202. of the Rules.

102. Furniture, furnishings, etc.

- 1. Furniture shall be provided preferably in the corridor and the wall of above stairways.
- 2. Furniture and furnishings provided in the accommodation spaces or control stations of floating structures less than 1,000 tons gross tonnage shall be minor fire risk. However, when deemed appropriate by the Society, considering fire protection, which does not require.

103. Installation of stoves, etc.

Where stoves, gas/electric ranges or heaters are installed in the floating structures, these are to be as follows.

- 1. These shall be fixed in position not to move and so constructed as to reduce fire risks to a minimum. No such radiators shall be fitted with an element so exposed that clothing, curtains, or other similar materials can be scorched or set on fire by heat from the element.
- 2. Combustible parts from stoves, gas/electric ranges or heater bedplates and floor installing these things are to be non-combustible materials.
- **3.** Except bedplates and floor by requirements of **Par 2**, in case of non-combustible materials, these are to be the side of stoves and not less than 0.3 meter from the top, in case of except non-combustible material, these are to be not less than 0.6 meter from the stove sides, not less than 0.9 meter from the top.
- 4. Except the floor by Par 2, in case of except non-combustible materials, gas/electric ranges or heaters are to be not less than 0.3 meter from the their sides, not less than 0.9 meter from the top.
- 5. Funnel parts not insulated are to be not less than 0.3 meter from except non-combustible material.
- 6. The height of on weather deck is to be not less than 1 meter.
- 7. The parts of exhaust ducts passing the accommodation spaces are to be insulated.

104. Installation of flame screens

Flame screens to be able to protect fires from the related spaces are to be installed for the air pipe openings and other openings of the spaces having fuel oil tanks and accumulation possibility of other flammable vapours.

105. Installation of waste receptacles

Waste receptacles installed in the floating structures shall be constructed of non-combustible materials with no openings in the sides and bottom. This requirement is not intended to preclude the use of containers constructed of combustible materials in galleys, pantries, bars, garbage handling or storage spaces and incinerator rooms provided they are intended purely for the carriage of wet waste, glass bottles and metal cans and are suitably marked.

106. Boundary bulkheads

Boundary bulkheads of accommodation spaces and public spaces are to be constructed of non-combustible materials. ${\bf \Phi}$

CHAPTER 6 MACHINERY INSTALLATIONS

Section 1 General

101. Machinery installations

Machinery installations of floating structures are to be in accordance with Ch 10 of the Rules for the Classification of Mobile offshore Units. However, requirements of Ch 7 of this Guidance are to be applied for electrical equipment. \updownarrow

CHAPTER 7 ELECTRICAL INSTALLATIONS

Section 1 General

101. Electrical Installations

Electrical Installations installed in floating structures are to be complied with the requirements in Pt 6, Ch 1 of the Rules. In this case, the main source of electrical power(including generating installations) and the emergency source of electrical power are to comply with 102. and 103.

102. Main source of electrical power

Electrical power supply installations of usage that can supply enough electrical power for installations such as electrical appliances, etc. installed in floating structures should be provided. In this case, capacity calculation should consider diversity factor.

103. Emergency source of electrical power

- 1. Independent emergency source of electrical power complied with either requirement of the following items should be installed in the floating structures.
 - (1) Battery (discharge indicator is to be installed) that necessary electric power is always charged and electric power is to provide without excessive voltage drop.
 - (2) Independent oil supply system and generator operated by effective prime movers(it is to use oil fuel having a flashpoint of not less than 60 °C) having starter deemed appropriate by the Society. In this case, emergency switchboard is to be installed to emergency source of electrical power as closely as possible.
- 2. Emergency source of electrical power by Par 1 is to be provided automatically in case main source of electrical power is out of order and then it is lost.
- 3. Emergency source of electrical power installed by **Par 1** is to be provided not less than 6 hours at least for the following each item.
 - (1) Anchor lights
 - (2) Emergency electric lighting system installed in the following each station
 - (A) Corridor, stairway, ladder and exit
 - (B) Main generating system room and engine control room
 - (C) Others considered station necessary by this Society
 - (3) Electrical alarm system and indicators
 - (4) Fire detection system and manual fire alarm system
 - (5) Communication systems
 - (6) Fire pumps
 - (7) Automatic sprinkler systems
 - (8) Elevator
 - (9) Emergency indicating lights
- 4. Emergency source of electrical power installed by **Par 1** is to be installed in accordance with the requirements of following each item.
 - (1) It is to be above the uppermost continuous deck.
 - (2) The operation of the emergency services are not to be influenced due to firing and other casualties of engine room spaces.
 - (3) It is to be segregated and purged from firing and electric sparks.
- 5. Wires used for the emergency source of electrical power system are to be flame-retardant. ψ

CHAPTER 8 FIRE-FIGHTING APPLIANCES

Section 1 General

101. Fire-fighting Appliances

Fire fighting appliances to be installed on floating structures are to comply with the requirements in **Pt 8** of the Rules. In this case, arrangement of a Siamese connection, fire fighting appliances of accommodation spaces, automatic sprinkler and fire detection systems shall be in accordance with articles **102.** to **104.**

102. Arrangement of a Siamese connection

1. In floating structures which are not less than 500 gross tonnages, a Siamese connection, which is in accordance with the Fire safety standard Siamese connection pipe appliances, shall be installed.

103. Fire-fighting Appliances of accommodation spaces, etc.

1. In accommodation, office and control spaces of floating structures, fire-fighting appliances shall be provided according to the following table. In this case, if floating structures are not less than 1,000 tonnages, 5 portable fire extinguishers shall be arranged at least.

Corridor	One for each 30 m of the corridor length or part thereof One of liquid, foam or dry powder fire extinguisher(it is to be a kind of phosphate)
Public spaces and living room where not less than 8 people are living per 1 room (except galleys)	One of liquid, foam or dry powder fire extinguisher(it is to be a kind of phos-phate) for each lower area 250 $\rm m^2$ or part thereof
Galleys	One of foam, carbon dioxide gas or dry powder fire extinguisher
Paint lockers and flammable liquid lockers	 Entrances to the accommodation spaces or lockers having a deck area 4 m² or more : fire fighting system complied with any one of the following items and operated at outsides of paint lockers and flammable liquid lockers (A) Carbon dioxide gas fire extinguisher capable of supplying carbon dioxide 40 % or above of protected area's total volume (B) Dry powder fire extinguisher capable of supplying dry powder of 0.5 kg/m³ or more (C) Water spray or sprinkler system capable of supplying water of 5 l/(m² • min). Water spray system is to be connected to the fire main of floating structures. (D) Fire extinguisher deemed by the Society same as fire extinguisher of (A) to (C) Less than 4 m² lockers has no entrances to the accommodation spaces : One portable carbon dioxide gas fire extinguisher capable of delivering through one discharge outlet of locker boundary
Luggage room and lockers	One of liquid, foam or dry powder fire extinguisher located near the entrances(it is to be a kind of phosphate)
Sales shop	One of liquid, foam or dry powder fire extinguisher(it is to be a kind of phos- phate)

- In floating structures, in case exhaust ducts from galley ranges pass accommodation spaces or spaces where flammable substance is, exhaust ducts are to comply with the requirements in Pt 8, Ch 3, 306. 5 (2) of the Rules.
- 3. In floating structures having not less than 1,000 tonnages, cooking equipment is to comply with the requirements in Pt 8, Ch 3, 405. 4 of the Rules.

104. Automatic sprinkler system and fire detection system

In floating structures, automatic sprinkler systems or fire detection systems according to the requirements in the law for fire fighting facility installation maintenance & safety management are to be installed. $~\psi$

GUIDANCE FOR FLOATING STRUCTURES

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