Revised Guidance for Battery Systems on Board of Ships (Final)

2020. 1.



Machinery Rule Development Team

Effective Date : 1 January 2020

(The contract date for ship construction)

• The requirement for equivalence has been amended in accordance with the amendment to Part 1 of the Rules.

Present	Amendment	Remark
CHAPTER 1 GENERAL	CHAPTER 1 GENERAL	
Section 1 General	Section 1 General	
101 103. <same as="" present="" rules="" the=""></same>	101 103. <same as="" present="" rules="" the=""></same>	
104. Equivalency Special equipment, which is not appropriate to apply the re- quirements 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.	satisfied that such equipment is equivalent to or above those complying with the requirements of this Guidance. The equiv- alence of alternative and novel features which deviate from or are not directly applicable to the Guidance is to be in accord- ance with Pt 1, Ch 1, 104. of Rules for the Classification of Steel Ships.	amended in accordance with the amendment to Part 1 of the Rules that
105. <same as="" present="" rules="" the=""> Section 2 <same as="" present="" rules="" the=""> CHAPTER 2 - 3 <same as="" present="" rules="" the=""></same></same></same>	105. <same as="" present="" rules="" the=""> Section 2 <same as="" present="" rules="" the=""> CHAPTER 2 - 3 <same as="" present="" rules="" the=""></same></same></same>	

Revised Guidance for Battery Systems on Board of Ships

(Development Review : For external opinion inquiry)

2020. 1.



Machinery Rule Development Team

Effective Date : 1 July 2020

(The contract date for ship construction)

Present CHAPTER 1 GENERAL CHAPTER 2 CLASSIFICATION SURVEYS			Amendment					Remark	
				CHAPTI					
			CHAPTER 2 CLASSIFICATION SURVEYS						
Section 1 - 2 <	same as the p	oresent	Rules>	s	ection 1 - 2 <	same as the	present	Rules>	
Section 3	Section 3 Tests and Inspections				Section 3				
301. <same as="" present="" rules="" the=""></same>			301.	301. <same as="" present="" rules="" the=""></same>					
302. Test and Inspection	on			302.	Test and Inspection	n			
1. The battery system sl in accordance with th		the test a	and inspection		The battery system shin accordance with the		the test	and inspection	1
2 3. <same as="" p<="" td="" the=""><td>resent Rules></td><td></td><td></td><td>2</td><td>- 3. <same as="" pr<="" td="" the=""><td>esent Rules></td><td></td><td></td><td></td></same></td></same>	resent Rules>			2	- 3. <same as="" pr<="" td="" the=""><td>esent Rules></td><td></td><td></td><td></td></same>	esent Rules>			
Table 1 - 3 <same as="" t<="" td=""><td>ne present Rules></td><td></td><td></td><td>Table</td><td>1 - 3 <same as="" td="" th<=""><td>e present Rules></td><td></td><td></td><td></td></same></td></same>	ne present Rules>			Table	1 - 3 <same as="" td="" th<=""><td>e present Rules></td><td></td><td></td><td></td></same>	e present Rules>			
Table 4 Power conversion	n system for powe	er supply		Table	e 4 Power conversio	n system for pow	er supply	(2020)	
No. Test	Test Standard	Type Approval	Testing and Inspection	No.	Test	Test Standard	Type Approval	Testing and Inspection	(Deleted) - The requirements that
1 - 10 <	1 - 10 <same as="" present="" rules="" the=""></same>				1 - 10 <same as="" present="" rules="" the=""></same>			are not applicable to the	
<u>11</u> <u>Charge and recharge</u> <u>energy test⁽³⁾</u>	<u>IEC 60204-3/6.4.4</u>	<u> </u>		++	Charge and recharge energy-test ⁽³⁾	IEC 60204-3/6.4.4	\ominus		testing of power conversion system and
12 - 15 <same as="" present="" rules="" the=""></same>				12 - 15 <same as="" present="" rules="" the=""></same>			redundant requirements		
16Voltage variationTest	<u>IEC 61000-4-11</u>	<u>0</u>	<u>O</u>	16	Voltage variation Test	IEC 61000-4-11	\ominus	\ominus	have been deleted.
(Notes) (1) - (5) <same as="" p<="" td="" the=""><td>resent Rules></td><td></td><td></td><td>(Not (1)</td><td>es)) - (5) <same as="" p<="" td="" the=""><td>resent Rules></td><td></td><td></td><td></td></same></td></same>	resent Rules>			(Not (1)	es)) - (5) <same as="" p<="" td="" the=""><td>resent Rules></td><td></td><td></td><td></td></same>	resent Rules>			

Present				Remark	
Table 5 Test criter	ia of power conversion System	Tabl	le 5 Test criteria	of power conversion System (2020)	(Deleted)
No. Test	Description	No.	. Test	Description	- The requirements that
1 - 5 <same as="" present="" rules="" the=""></same>			1 - 5	are not applicable to the	
6 Electrical power supply variation test		6	Electrical power supply variation test	Refer to Ch 3, Sec 23 of Guidance for Approval of Manufacturing Process and Type Approval, Etc.	testing of power conversion system has been deleted.
Sectio	n 4 Tests after installation		Section	4 Tests after installation	
CHAPTER	R 3 CONSTRUCTION AND EQUIPMENT		CHAPTER	3 CONSTRUCTION AND EQUIPMENT	
Section 1 -	5 <same as="" present="" rules="" the=""></same>		Section 1 -	5 <same as="" present="" rules="" the=""></same>	
Section 6	Monitoring and Safety Systems		Section 6	Monitoring and Safety Systems	
601. <same as="" th="" th<=""><th>ne present Rules></th><th>601.</th><th>. <same as="" th="" the<=""><th>e present Rules></th><th></th></same></th></same>	ne present Rules>	601.	. <same as="" th="" the<=""><th>e present Rules></th><th></th></same>	e present Rules>	
602. Alarm and s	status information	602.	. Alarm and sta	atus information	
1. <same as="" present="" rules="" the=""></same>		1.	<same as="" pro-<="" td="" the=""><td></td></same>		
	ystem shall ensure that the following items a the engine control room and continuous			tem shall ensure that the following items ar the engine control room and continuousl	
(1) Battery (<u>A)</u> Cell vo	ltage, temperature			num, minimum and average Cell cell voltage	- The items to be transmitted to the engine
(2) - (3) < san	isame as the present Rules> ne as the present Rules>		$\frac{(B) - (E)(C)}{(2) - (3)} < \text{same}$	erature <u>(2020)</u> - <u>(F)</u> <same as="" present="" rules="" the=""> e as the present Rules></same>	control room fo monitoring have been amended.
3. <same as="" p<="" td="" the=""><td>present Rules></td><td>3.</td><td><same as="" pre-<="" td="" the=""><td>esent Rules></td><td></td></same></td></same>	present Rules>	3.	<same as="" pre-<="" td="" the=""><td>esent Rules></td><td></td></same>	esent Rules>	

Present	Amendment	Remark
Section 7 Risk Assessment 701. <same as="" present="" rules="" the=""></same>	Section 7 Risk Assessment 701. <same as="" present="" rules="" the=""></same>	
702. Considerations for risk assessment	702. Considerations for risk assessment	
 Various methods can be used for risk assessment and at least an analysis of the following risk factors shall be included. (1) - (8) <same as="" present="" rules="" the=""> <newly added=""></newly></same> - 3. <same as="" present="" rules="" the=""></same> 	 1. Various methods can be used for risk assessment and at least an analysis of the following risk factors shall be included. (1) - (8) <same as="" present="" rules="" the=""></same> (9) Means for detecting off-gas released from battery cell(s) caused by internal pressure rise, etc. and control measures when off-gases are released. (2020) 2 3. <same as="" present="" rules="" the=""></same> 	(Amended)