Guidance for Battery Systems on Board Ships

(Development Review : For external opinion inquiry)

2026. 1.

Machinery Rule Development Team

Effective Date : 1 July 2026

(The contract date for ship construction)

Present	Amendment	Note
CHAPTER 2 CLASSIFICATION SURVEYS **Section 1 - 2 〈same as the present Rules〉** **Section 3 Tests and Inspections** **301. General** *(2022)* **1. - 2. 〈same as the present Rules〉** **3. 〈newly added〉** **302. Test and Inspection** **1.** The battery cells, modules, system, and related control system shall be subjected to the type approval test and inspection in accordance with the following tables. However, operating conditions in the marine environment shall be considered. *(2022)* **2.** 〈same as the present Rules〉 **3.** Some test items for battery system in **Table 2** may be added or changed at the request of the Society. *(2023)* **4.** 〈same as the present Rules〉 **Section 4 〈same as the present Rules〉**	**CHAPTER 2 CLASSIFICATION SURVEYS** **Section 1 - 2 〈same as the present Rules〉** **Section 3 Tests and Inspections** **301. General** *(2022)* **1. - 2. 〈same as the present Rules〉** **3.** The procedures and tests for type approval of materials and equipment shall be in accordance with **Ch 3, Sec 1** of the **Guidance for Approval of Manufacturing Process and Type Approval, Etc.** *(2026)* **302. Test and Inspection** **1.** The battery cells, ~~modules,~~ system, and related control system shall be subjected to the type approval test and inspection in accordance with the following tables. However, operating conditions in the marine environment shall be considered. *(2026)* **2.** 〈same as the present Rules〉 **3.** Some test items for battery system in **Table 2** may be added or changed at the request of the Society. *(2023)* **4.** 〈same as the present Rules〉 **Table 2 Battery System 〈see the next page〉** **Section 4 〈same as the present Rules〉**	(newly added) - The new requirement has been introduced for battery system to comply with Ch 3, Sec 1 of the Guidance. (Deleted) - Battery modules were deleted and are tested as part of the battery system. (newly added) - A new note has been introduced to allow acceptance of high voltage and insulation resistance test certification when modules and BMSs are manufactured at different factories. - Clarified the timing of the insulation resistance test - Note (3) has been added to Test No.6.

〈Present〉

Table 2 Battery system *(2024)*

<table>
<tr><th>No.</th><th>Test</th><th>Test Standard</th><th>Type Approval</th><th>Testing and Inspection</th></tr>
<tr><td>1-5</td><td colspan="3">〈same as the present Rules〉</td><td></td></tr>
<tr><td>6</td><td>High Voltage Test</td><td>IEC 61439-1, 10.9.2</td><td>○</td><td>○</td></tr>
<tr><td>7</td><td>Insulation Resistance Test</td><td>
<table>
<tr><th>Rated voltage Un (V)</th><th>Minimum test voltage (V)</th><th>Test minimum insulation resistance ($M\Omega$)</th></tr>
<tr><td>$Un \leq 250$</td><td>$2 \times Un$</td><td rowspan="2">1</td></tr>
<tr><td>$250 < Un \leq 1{,}000$</td><td>500</td></tr>
<tr><td>$1{,}000 < Un \leq 7{,}200$</td><td>1000</td><td rowspan="2">$1+\frac{U_n}{1000}$</td></tr>
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</table>
</td><td>○</td><td>○</td></tr>
<tr><td>8</td><td>Safety Function Test(1)</td><td>Specifications</td><td>○</td><td>○</td></tr>
<tr><td>9-14</td><td colspan="3">〈same as the present Rules〉</td><td></td></tr>
</table>

(Notes) *(2024)*

Some functions may be replaced by type approval tests in consultation.

(1) - (2) 〈same as the present Rules〉

(3) Battery cells that might be damaged by the test can be disconnected to ensure that the test voltage can be applied without damaging the battery cells.

(4) 〈same as the present Rules〉

(5) - (6) 〈newly added〉

〈Amendments〉

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(4) 〈same as the present Rules〉

(5) Battery modules and battery management systems may be tested separately. *(2026)*

(6) Insulation resistance test shall be carried out before and after the environmental tests (Damp heat test, cold test and high voltage test). *(2026)*