GUIDANCE FOR THE APPROVAL AND TYPE APPROVAL OF MATERIALS AND EQUIPMENT FOR MARINE USE

Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use 2021 AMENDMENT NO.2

Notice No.66 27 December 2021
Resolved by Technical Committee on 28 July 2021

ClassNK
NIPPON KAIJI KYOKAI

Notice No.66 27 December 2021
AMENDMENT TO THE GUIDANCE FOR THE APPROVAL AND TYPE APPROVAL OF MATERIALS AND EQUIPMENT FOR MARINE USE

“Guidance for the approval and type approval of materials and equipment for marine use” has been partly amended as follows:

Amendment 2-1

Annex 2 PROCEDURES FOR PROTOTYPE TESTS FOR TYPE APPROVAL AND PRODUCTION TESTS FOR RESCUE BOATS

Chapter 1 PROCEDURES FOR PROTOTYPE TESTS FOR TYPE APPROVAL OF RESCUE BOATS

1.1 Material Test

1.1.2 Material Test for Inflated Rescue Boats and Inflated Fast Rescue Boats [7.2.14]

The following tests **-1** to **-15** are to be carried out.

Sub-paragraph -10 has been amended as follows.

10 Oil resistance
This test is subject to the test method specified in *ISO* 15372:2000/Amd 1:2021, 6.2.5.

Annex 3 PROCEDURES FOR PROTOTYPE TESTS FOR TYPE APPROVAL AND PRODUCTION TESTS OF INFLATABLE LIFERAFTS

Chapter 1 PROCEDURES FOR PROTOTYPE TESTS FOR TYPE APPROVAL OF INFLATABLE LIFERAFTS

1.1 Material Test [5.17.13]

Paragraph 1.1.1 has been amended as follows.

1.1.1

Materials for main buoyancy chambers, canopy supports, floors, floor buoyancy chambers and canop~~y~~ies are to be subjected to the following tests. The materials when tested are to meet the following requirements. When there are any difficulties in carrying out these tests, other testing means deemed to be equivalent may be acceptable.

1 (Omitted)

2 Tests and performance criteria

(1) (Omitted.)

(2) Fabrics used for the manufacture of buoyancy ~~tubes~~chambers, inflatable supports for canopies, and floors are to meet the following requirements.

((a) to (f) are omitted.)

(g) Porosity

When tested by the method prescribed below and with a pressure of 27.5 *kPa* applied and maintained beneath the fabric, there is to be no signs of any leakage over a minimum period of 5 *min*.

i) Test for porosity

A specimen of the fabric is to be prepared and tested in accordance with paragraph 6.2.9.2 of *ISO* ~~TR 6065 paragraph A.2.10.2~~ 15372:2000.

(h) Oil resistance

i) When tested by the method prescribed below, after exposing the outer surface to oil ~~*ASTM* No.1~~ *IRM* 901, for 2 *h* at 20℃±2℃, there is to be no separation of coating from textile and no residual tackiness when two exposed faces are pressed together. The coating is not to smear when rubbed with a single pass of the finger.

ii) The test is to be carried out not less than 16 *h* after vulcanisation or curing.

iii) The apparatus, preparation of specimens and test procedure is to be accordance with paragraph 6.2.5 of *ISO* ~~TR 6065 paragraph A.2.5~~15372:2000/Amd 1:2021. Each coated face is to be tested.

((i) to (l) are omitted.)

3 (Omitted)

4 (Omitted)

EFFECTIVE DATE AND APPLICATION (Amendment 2-1)

1. The effective date of the amendments is 27 December 2021.

Amendment 2-2

Part 6 MACHINERY

Chapter 8 APPROVAL OF USE OF RECIPROCATING INTERNAL COMBUSTION ENGINES

8.5 Approval Tests

8.5.2 Details of Tests

Sub-paragraph -2(7) has been amended as follows.

2 During the stage *B*, the following items of tests are to be included. Deviations from the items, if any, are to be agreed with the Society.
((1) to (6) are omitted.)
(7) For electronically-controlled engines, integration tests are to verify that the response of the complete mechanical, hydraulic and electronic system is as predicted for all intended operational modes.
The scope of these tests is to be agreed upon with the Society for selected cases based upon the FMEA required in ~~**Annex D2.1.1, Part D of the Guidance for the Survey and Construction of Steel Ships**~~ **2.5.11, Part D of the Rules for the Survey and Construction of Steel Ships**.
((8) to (12) are omitted.)

Part 7 CONTROL AND INSTRUMENTATION EQUIPMENT AND ELECTRICAL INSTALLATIONS

Chapter 1 APPROVAL OF USE OF AUTOMATIC DEVICES AND EQUIPMENT

Table 7.1-1 has been amended as follows.

Table7.1-1 Environmental Test Items, Testing Conditions, Methods, and Criteria

<table>
<tr><th>Test Item</th><th colspan="2">Testing condition and method</th><th>Criteria</th></tr>
<tr><td>External examination</td><td colspan="2" rowspan="14">(Omitted)</td><td rowspan="14">(Omitted)</td></tr>
<tr><td>Operation test and performance test</td></tr>
<tr><td>Electrical power supply failure test</td></tr>
<tr><td>Electrical power supply fluctuation test</td></tr>
<tr><td>Power supply fluctuation test</td></tr>
<tr><td>Insulation resistance test</td></tr>
<tr><td>High voltage test</td></tr>
<tr><td>Pressure test</td></tr>
<tr><td>Dry heat test</td></tr>
<tr><td>Damp heat test</td></tr>
<tr><td>Vibration test</td></tr>
<tr><td>Inclination test</td></tr>
<tr><td>Cold test</td></tr>
<tr><td>Salt mist test</td></tr>
<tr><td>Electrostatic discharge immunity test</td></tr>
<tr><td rowspan="6">Radiated radio frequency immunity test</td><td colspan="2">(Omitted)</td><td rowspan="6">(Omitted)</td></tr>
<tr><td>(Omitted)</td><td>(Omitted)</td></tr>
<tr><td>(Omitted)</td><td>(Omitted)</td></tr>
<tr><td>(Omitted)</td><td>(Omitted)</td></tr>
<tr><td>(Omitted)</td><td>(Omitted)</td></tr>
<tr><td colspan="2">- If for tests of equipment an input signal with a modulation frequency of 1 kHz is necessary a modulation frequency of 400 Hz may be chosen.
- If equipment is intended to receive radio signals for the purpose of radio communication (e.g. wifi router, remote radio controller), then the immunity limits at its communication frequency do not apply, subject to the provisions in 5.2 of Annex ~~D~~18.1.1, Part D of the Rules for the Survey and Construction of Steel Ships.
- Detailed test methods are according to Level 3 of IEC 61000-4-3.</td></tr>
</table>

Table7.1-1 Environmental Test Items, Testing Conditions, Methods, and Criteria (continued)

<table>
<tr><th>Test Item</th><th colspan="3">Testing condition and method</th><th>Criteria</th></tr>
<tr><td>Conducted low frequency immunity test</td><td colspan="3">(Omitted)</td><td>(Omitted)</td></tr>
<tr><td>Conducted high frequency immunity test</td><td colspan="3"></td><td></td></tr>
<tr><td>Electrical burst/fast transient immunity test</td><td colspan="3"></td><td></td></tr>
<tr><td>Surge immunity test</td><td colspan="3"></td><td></td></tr>
<tr><td rowspan="5">Radiated emission test</td><td colspan="3">(Omitted)</td><td rowspan="5">(Omitted)</td></tr>
<tr><td>Frequency range: Up to 1 GHz</td><td colspan="2">(Omitted)</td></tr>
<tr><td rowspan="3">Frequency range: Above 1 GHz</td><td>(Omitted)</td><td>(Omitted)</td></tr>
<tr><td>(Omitted)</td><td>(Omitted)</td></tr>
<tr><td colspan="2">- Distance between equipment and antenna is to be 3 m.
- Equipment intended to transmit radio signals for the purpose of radio communication (e.g. wifi router, remote radio controller) may be exempted from limits, within its communication frequency range, subject to the provisions in 5.2 of Annex <s>D</s>18.1.1, Part D of the <s>Guidance</s><u>Rules</u> for the Survey and Construction of Steel Ships.
- Detailed test methods are according to CISPR 16-2-3.</td></tr>
<tr><td>Conducted emission test</td><td colspan="3">(Omitted)</td><td>(Omitted)</td></tr>
<tr><td>Flame retardant test</td><td colspan="3"></td><td></td></tr>
</table>

(Remarks are omitted.)

Chapter 8 APPROVAL OF USE OF COMPUTER BASED SYSTEMS

8.1 General

8.1.1 Scope

Sub-paragraph -1 has been amended as follows.

1 The requirements in this chapter apply to tests and inspection for "approval of use" of computer based systems belong to category II or III specified in **2.2.2, Annex ~~D~~18.1.1 ~~"Computer Based Systems"~~, Part D of the ~~Guidance~~Rules for the Survey and Construction of Steel Ships** (hereinafter referred to as "the Annex" in this chapter) in accordance with **~~D~~18.1.3, Part D of the ~~Guidance~~Rules for the Survey and Construction of Steel Ships**, **2.2.1-2 of the Guidance for Automatic and Remote Control System, 12.1.3**, **Part 9 of the ~~Guidance~~Rules for High Speed Craft, 14.1.3**, **Part 7 of the ~~Guidance~~Rules for the Survey and Construction of Inland Waterway Ships** and **3.1.3-1** of the Annex.

EFFECTIVE DATE AND APPLICATION (Amendment 2-2)

1. The effective date of the amendments is 1 January 2022.

Amendment 2-3

Part 6 MACHINERY

Chapter 2 TYPE APPROVAL OF USE OF MACHINERY AND EQUIPMENT

2.1 General

2.1.1 Scope

Sub-paragraph (7) has been amended as follows.

The requirements of this chapter deal with the tests and inspection relating to the approval of the machinery and equipment listed for which approval of the Society is to be obtained in advance before they are used in ships as required by **the Rules for the Survey and Construction of Steel Ships** (hereinafter referred to as "the Rules").

(1) (Omitted)
(2) (Omitted)
(3) (Omitted)
(4) (Omitted)
(5) (Omitted)
(6) (Omitted)
(7) Pipes of special materials (**12.1.6~~-1~~, Part D of the Rules**)
(8) (Omitted)
(9) (Omitted)
(10) (Omitted)
(11) (Omitted)
(12) (Omitted)
(13) (Omitted)

Chapter 6 APPROVAL OF USE OF PLASTIC PIPES

6.9 Testing Procedures and Criteria

6.9.1 Criteria for Approval Test for Process of Manufacture

Sub-paragraph (5) has been amended as follows.

The requirements and the criteria for the approval tests are, in principle, referred to **Table 6.6**. For application of the tables, see below:

(1) (Omitted)
(2) (Omitted)
(3) (Omitted)
(4) (Omitted)
(5) The ~~F~~flame spread and surface flammability, fire endurance, durability against chemicals, smoke generation and toxicity tests specified in **Table 6.6** are to be carried out~~,~~ in cases where ~~they are~~ required ~~in~~ by the **Annex ~~D~~12.1.6~~-2~~, Part D of the ~~Guidance~~ Rules for the Survey and Construction of Steel Ships**.
(6) (Omitted)
(7) (Omitted)

Table 6.6 has been amended as follows.

Table 6.6 Requirements and Criteria of Approval Test for Process of Manufacture of Plastic ~~p~~Pipes

Test item	Testing method	Criteria
(Omitted)		
Heat dependence of material	*ISO* 75-2:2013 Method A (*JIS K* 7191 Method A), *ISO* 306 (*JIS K* 7206), *ISO* 2507 *ASTM D*648-18	Minimum heat distortion/deflection temperature ≥ 80 °C Permissible working temperature depending on the working pressure ≤（Minimum heat distortion/deflection temperature -20 °C）
(Omitted)		
Flame spread and surface flammability	*IMO Res. A*.753(18) Appendix 3 (including any amendments due to *IMO Res. MSC*.313(88) and *IMO Res. MSC*.399(95))	Comply with the criteria stipulated by *IMO Res. A*.753(18) *Appendix* 3 (including any amendments due to *IMO Res. MSC*.313(88) and *IMO Res. MSC*.399(95))
	ASTM D 635-18	HB Maximum burning rate < 60 *mm/min*
(Omitted)		

EFFECTIVE DATE AND APPLICATION (Amendment 2-3)

1. The effective date of the amendments is 1 July 2022.

2. Notwithstanding the amendments to the Guidance, the current requirements apply to plastic piping systems other than those which fall under the following:

(1) plastic piping systems for which the application for approval of use is submitted to the Society on or after the effective date;

(2) plastic piping systems for which the date of renewal of approval of use is on or after the effective date; or

(3) plastic piping systems used on ships for which the date of contract for construction* is on or after the effective date.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

(1) such alterations do not affect matters related to classification, or

(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.

The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.