Ventilation Requirements for Totally Enclosed Lifeboats

Object of Amendment

Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use

Reason for Amendment

Chapter IV of the International Life-Saving Appliance Code (LSA Code) specifies requirements for totally enclosed lifeboats. In addition, the IMO adopted resolution MSC.81(70), which specifies requirements for prototype testing requirements for life-saving appliances, and resolution MSC.402(96), which specifies requirements for maintenance and examination of lifeboats, as relevant requirements.

With regard to an accident in which evacuation was carried out using totally enclosed lifeboat, it was reported to the IMO that a crew member complained of having difficulty breathing. In response, the IMO reviewed the ventilation requirements for totally enclosed lifeboats and discussed ways of further ensuring the safety of those using such lifeboats by improving the environmental conditions (temperature, carbon dioxide concentrations, etc.) inside the lifeboats.

Based on the aforementioned reviewed, the IMO Maritime Safety Committee (MSC) adopted resolutions MSC.535(107) and MSC.554(107) to amend both Chapter IV of the LSA Code and resolution MSC.81(70) at its 107th session (MSC107) in May–June 2023. In addition, the MSC subsequently adopted resolution MSC.559(108) to amend MSC.402(96) at its 108th session in May 2024.

Accordingly, relevant requirements are amended based on resolutions MSC.535(107), MSC.544(107) and MSC.559(108).

Outline of Amendment

Adds requirement for means of ventilation (ventilation capacity, power source, etc.) for totally enclosed lifeboats.

Effective Date and Application

(1) Annex 2.1, Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use

This draft amendment applies to totally enclosed lifeboat installed on the following ships:

(a) ships for which the date of the contract of construction is on or after 1 January 2029, or in the absence of the contract, ships the keels of which are laid or which are at a similar stage of construction on or after 1 January 2029; or

(b) ships other than those prescribed in (1) above for which the date of contract for delivery of the totally enclosed life boat or, in the absence of a contract of delivery, the actual date of delivery of the totally enclosed life boat to the ship is on or after 1 January 2029.

(2) Annex 2.2, Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use

This amendment applies to life saving appliances installed on ships on or after 1 January 2029.

ID:DX25-07

Amended-Original Requirements Comparison Table (Ventilation Requirements for Totally Enclosed Lifeboats)

Amended	Original	Remarks
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**	
Annex 2.1 Procedures for Prototype Tests for Type Approval and Production Tests of Lifeboats	**Annex 2.1 Procedures for Prototype Tests for Type Approval and Production Tests of Lifeboats**	
Chapter 1 Procedures for Prototype Tests for Type Approval of Lifeboats	**Chapter 1 Procedures for Prototype Tests for Type Approval of Lifeboats**	
1.2 Strength and Performance Tests	**1.2 Strength and Performance Tests**	
1.2.9 Lifeboat Operation Test [6.10]	**1.2.9 Lifeboat Operation Test [6.10]**	
1 Operation of Engine and Fuel Consumption Test [6.10.1]	**1** Operation of Engine and Fuel Consumption Test [6.10.1]	Resolution MSC.544(107) ANNEX Paragraph 4
The lifeboat is to be loaded with weights equal to the mass of its equipment and the number of persons for which the lifeboat is to be approved. The engine is to be started, and the lifeboat manoeuvred for a period of at least 4 *hours* to demonstrate satisfactory operation. The lifeboat is to be run at a speed of not less than 6 *knots* and, with the powered means of ventilation in operation if fitted, for a period which is sufficient to ascertain the fuel consumption and to establish that the fuel tank has the required capacity. The maximum towing force of the lifeboat is to be determined. This information is to be used to determine the largest fully loaded liferaft the lifeboat can tow at 2 *knots*. The fitting designated for towing other craft is to be secured to a stationary object by a tow rope. The engine is to be operated ahead at full speed for a period of at least 2 *minutes* and the towing force	The lifeboat is to be loaded with weights equal to the mass of its equipment and the number of persons for which the lifeboat is to be approved. The engine is to be started and the lifeboat manoeuvred for a period of at least 4 *h* to demonstrate satisfactory operation. The lifeboat is to be run at a speed of not less than 6 *knots* for a period which is sufficient to ascertain the fuel consumption and to establish that the fuel tank has the required capacity. The maximum towing force of the lifeboat is to be determined. This information is to be used to determine the largest fully loaded liferaft the lifeboat can tow at 2 *knots*. The fitting designated for towing other craft is to be secured to a stationary object by a tow rope. The engine is to be operated ahead at full speed for a period of at least 2 *minutes*. There is to be no damage to the towing fitting or its supporting structure. The maximum towing	

Amended-Original Requirements Comparison Table (Ventilation Requirements for Totally Enclosed Lifeboats)

Amended	Original	Remarks
measured and recorded. There is to be no damage to the towing fitting or its supporting structure. The maximum towing force of the lifeboat is to be recorded on the type approval certificate. (-2 and -3 are omitted.)	force of the lifeboat is to be recorded on the type approval certificate. (-2 and -3 are omitted.)	
1.2.13 Additional Tests for Totally Enclosed Lifeboat [6.14] **1** Self-righting test A suitable means is to be provided to rotate the lifeboat about a longitudinal axis to any angle of heel and then release it. The lifeboat, in the enclosed condition, is to be incrementally rotated to angles of heel up to and including 180 *degrees* and is to be released. After release, the lifeboat is always to return to the upright position without the assistance of the occupants. The ventilation system of either powered or passive type while in operation is not to compromise the ability of the lifeboat to self-right under any circumstance. These tests are to be conducted in the following conditions of load. ((1) and (2) are omitted.) (-2 and -3 are omitted.)	**1.2.13 Additional Tests for Totally Enclosed Lifeboat [6.14]** **1** Self-righting test A suitable means are to be provided to rotate the lifeboat about a longitudinal axis to any angle of heel and then release it. The lifeboat, in the enclosed condition, is to be incrementally rotated to angles of heel up to and including 180 *degrees* and is to be released. After release, the lifeboat is always to return to the upright position without the assistance of the occupants. These tests are to be conducted in the following conditions of load. ((1) and (2) are omitted.) (-2 and -3 are omitted.)	Resolution MSC.544(107) ANNEX Paragraph 5
4 Ventilation performance test The ventilation rate required by paragraph 4.6.6.1 of the LSA Code is to be measured under moored conditions. The test is to be carried out with only the persons necessary on board to perform the test. All entrances and hatches are to be kept closed. Ventilation openings are to stay open. The measured ventilation rate is not to be less than 5 m^3/h per person for the total number of persons which the lifeboat is permitted to accommodate.	(Newly added)	Resolution MSC.544(107) ANNEX Paragraph 6
The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A)		

Amended-Original Requirements Comparison Table (Ventilation Requirements for Totally Enclosed Lifeboats)

Amended	Original	Remarks
Annex 2.2 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** **1.2 Strength and Performance Tests** **1.2.4 Rigid Fast Rescue Boats [7.4]** (-1 to -10 are omitted.) **11** Righting test A self-righting test is to be carried out in accordance with **1.2.13** "Additional tests for totally enclosed lifeboats" of **Annex 2.1** "Procedures for Prototype Tests for Type Approval and Production Tests of Lifeboats". In the case of the boats which are not self-righting, the engine is to be running in neutral position and, after stopping automatically or by the helmsman's emergency release switch when inverted, it is to be easily restarted and run for 30 *min* after the rescue boat has returned to the upright position. For rescue boats with inboard engines, the test without engine and fuel is not applicable. **1.2.13-1(1)**, **1.2.13-3(1)** to **(3)** and **1.2.13-4** are not applicable. With regard to **1.2.13-2**, a boat fitted with a helmsman's emergency release switch is to be considered to be arranged to stop automatically when inverted. (-12 to -15 are omitted.)	**Annex 2.2 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** **1.2 Strength and Performance Tests** **1.2.4 Rigid Fast Rescue Boats [7.4]** (-1 to -10 are omitted.) **11** Righting test A self-righting test is to be carried out in accordance with **1.2.13** "Additional tests for totally enclosed lifeboats" of **Annex 2.1** "Procedures for Prototype Tests for Type Approval and Production Tests of Lifeboats". In the case of the boats which are not self-righting, the engine is to be running in neutral position and, after stopping automatically or by the helmsman's emergency release switch when inverted, it is to be easily restarted and run for 30 *min* after the rescue boat has returned to the upright position. For rescue boats with inboard engines, the test without engine and fuel is not applicable. **1.2.13-1(1)** and **1.2.13-3(1)** to **(3)** are not applicable. With regard to **1.2.13-2**, a boat fitted with a helmsman's emergency release switch is to be considered to be arranged to stop automatically when inverted. (-12 to -15 are omitted.)	Resolution MSC.544(107) ANNEX Paragraph 7.4

Amended-Original Requirements Comparison Table (Ventilation Requirements for Totally Enclosed Lifeboats)

Amended	Original	Remarks
1.2.5 Inflated Fast Rescue Boats [7.5] (-1 to -6 are omitted.) **7** Righting Test A righting test is to be carried out in accordance with **1.2.13** (except for **1.2.13-4)** of **Annex 2.1**. (-8 to -20 are omitted.) **1.2.6 Combined Fast Rescue Boats [7.6]** (-1 to -14 are omitted.) **15** Righting Test A righting test is to be carried out in accordance with **1.2.13** (except for **1.2.13-4)** of **Annex 2.1**. (-16 to -20 are omitted.)	**1.2.5 Inflated Fast Rescue Boats [7.5]** (-1 to -6 are omitted.) **7** Righting Test A righting test is to be carried out in accordance with **1.2.4-11**. (-8 to -20 are omitted.) **1.2.6 Combined Fast Rescue Boats [7.6]** (-1 to -14 are omitted.) **15** Righting Test A righting test is to be carried out in accordance with **1.2.4-11**. (-16 to -20 are omitted.)	Resolution MSC.544(107) ANNEX Paragraph 7.5 Resolution MSC.544(107) ANNEX Paragraph 7.6
The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (B)		

Amended-Original Requirements Comparison Table (Ventilation Requirements for Totally Enclosed Lifeboats)

Amended	Original	Remarks
EFFECTIVE DATE AND APPLICATION (A) **1.** The effective date of the amendments is 1 January 2026. **2.** Notwithstanding the amendments, the current requirements apply to totally enclosed lifeboats installed on the following ships: (1) ships for which the building contract is placed on or after 1 January 2029; (2) in the absence of the contract, ships the keels of which were laid or which were at a similar stage of construction on or after 1 January 2029. The term "a similar stage of construction" means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 *tonnes* or 1 % of the estimated mass of all structural material, whichever is less; (3) ships other than prescribed in (1) and (2), whose equipment is contractually delivered on or after 1 January 2029; (4) in the absence of the contractual delivery date, ships other than prescribed in (1) and (2), whose equipment is actually delivered on or after 1 January 2029. EFFECTIVE DATE AND APPLICATION (B) **1.** This amendment applies to life saving appliances installed on ships on or after 1 January 2029.		