

RESOLUTION MSC.458(101) (adopted on 13 June 2019)  
AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING  
GASES OR OTHER LOW-FLASHPOINT FUELS (IGF CODE)

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**AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING  
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THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the function of the Committee,

RECALLING ALSO resolution MSC.391(95), by which it adopted the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels ("the IGF Code"), which has become mandatory under chapter II-1 of the International Convention for the Safety of Life at Sea (SOLAS), 1974 ("the Convention"),

RECALLING FURTHER article VIII(b) and regulation II-1/2.29 of the Convention concerning the procedure for amending the IGF Code,

HAVING CONSIDERED, at its 101st session, amendments to the IGF Code proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1 ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IGF Code, the text of which is set out in the annex to the present resolution;

2 DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 July 2023 unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3 INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2024 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

5 REQUESTS ALSO the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CODE OF SAFETY FOR SHIPS USING  
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**PART A**

**2 GENERAL**

**2.2 Definitions**

- 1 The following new paragraph 2.2.42 is introduced after existing paragraph 2.2.41:

"2.2.42 *Ship constructed on or after 1 January 2024* means:

- .1 for which the building contract is placed on or after 1 January 2024;  
or
- .2 in the absence of a building contract, the keels of which are laid or  
which are at a similar stage of construction on or after 1 July 2024;  
or
- .3 the delivery of which is on or after 1 January 2028."

**PART A-1**

**SPECIFIC REQUIREMENTS FOR SHIPS USING NATURAL GAS AS FUEL**

**5 SHIP DESIGN AND ARRANGEMENT**

**5.3 Regulations – General**

- 2 The text defining  $f_v$  in paragraph 5.3.4.2 is replaced by the following:

" $f_v$  is calculated by use of the formulations for factor  $v$  contained in SOLAS regulation II-1/7-2.6.1.1 and reflects the probability that the damage is extending vertically above the lowermost boundary of the fuel tank. The formulations to be used are:"

**6 FUEL CONTAINMENT SYSTEM**

**6.8 Regulations on loading limit for liquefied gas fuel tanks**

- 3 The following regulation is added after existing regulation 6.8.2:

"6.8.3 For ships constructed on or after 1 January 2024, in cases where the tank insulation and tank location make the probability very small for the tank contents to be heated up due to an external fire, special considerations may be made to allow a higher loading limit than calculated using the reference temperature, but never above 95%."

## **9 FUEL SUPPLY TO CONSUMERS**

### **9.5 Regulations for fuel distribution outside of machinery space**

4 The following regulations are added after existing regulation 9.5.2:

"9.5.3 The requirements in 9.5.4 to 9.5.6 shall apply to ships constructed on or after 1 January 2024 in lieu of the requirements in 9.5.1 and 9.5.2.

9.5.4 Where gaseous fuel pipes pass through enclosed spaces in the ship, they shall be protected by a secondary enclosure. This enclosure can be a ventilated duct or a double wall piping system. The duct or double wall piping system shall be mechanically under pressure ventilated with 30 air changes per hour, and gas detection as required in 15.8 shall be provided. Other solutions providing an equivalent safety level may also be accepted by the Administration.

9.5.5 The requirement in 9.5.4 need not be applied for fully welded fuel gas vent pipes led through mechanically ventilated spaces.

9.5.6 Liquefied fuel pipes shall be protected by a secondary enclosure able to contain leakages. If the piping system is in a fuel preparation room or a tank connection space, the Administration may waive this requirement. Where gas detection as required in 15.8.1.2 is not fit for purpose, the secondary enclosures around liquefied fuel pipes shall be provided with leakage detection by means of pressure or temperature monitoring systems, or any combination thereof. The secondary enclosure shall be able to withstand the maximum pressure that may build up in the enclosure in case of leakage from the fuel piping. For this purpose, the secondary enclosure may need to be arranged with a pressure relief system that prevents the enclosure from being subjected to pressures above their design pressures."

## **10 POWER GENERATION INCLUDING PROPULSION AND OTHER GAS CONSUMERS**

### **10.3 Regulations for internal combustion engines of piston type**

5 New regulation 10.3.1.1.1 is added after existing regulation 10.3.1.1 as follows:

"10.3.1.1.1 For ships constructed on or after 1 January 2024, the exhaust system shall be equipped with explosion relief systems unless designed to accommodate the worst case overpressure due to ignited gas leaks or justified by the safety concept of the engine. A detailed evaluation of the potential for unburnt gas in the exhaust system is to be undertaken covering the complete system from the cylinders up to the open end. This detailed evaluation shall be reflected in the safety concept of the engine."

## **11 FIRE SAFETY**

### **11.3 Regulations for fire protection**

6 Regulation 11.3.3 is replaced by the following:

"11.3.3 The space containing the fuel containment system shall be separated from the machinery spaces of category A or other rooms with high fire risks. The separation shall be done by a cofferdam of at least 900 mm with insulation of A-60 class. When determining the insulation of the space containing the fuel containment system

from other spaces with lower fire risks, the fuel containment system shall be considered as a machinery space of category A, in accordance with SOLAS regulation II-2/9. For type C tanks, the fuel storage hold space may be considered as a cofferdam."

7 The following new regulation 11.3.3.1 is added after regulation 11.3.3:

"11.3.3.1 Notwithstanding the last sentence in 11.3.3, for ships constructed on or after 1 January 2024, the fuel storage hold space may be considered as a cofferdam provided that:

- .1 the type C tank is not located directly above machinery spaces of category A or other rooms with high fire risk; and
  - .2 the minimum distance to the A-60 boundary from the outer shell of the type C tank or the boundary of the tank connection space, if any, is not less than 900 mm."
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