

## Recent Amendments to the IGF Code

### Amended Rules and Guidance

Rules for the Survey and Construction of Steel Ships Part GF  
Guidance for the Survey and Construction of Steel Ships Parts B and GF  
Guidance for the Survey and Construction of High Speed Craft  
Guidance for the Survey and Construction of Passenger Ships  
Guidance for the Survey and Construction of Inland Waterway Ships

### Reason for Amendment

The International Code of Safety for Ship Using Gases or Other Low-flashpoint Fuels (hereinafter referred to as the “IGF Code”) was adopted as MSC.391(95) in June 2015 and entered into force on 1 January 2017. IACS, in turn, adopted its own unified interpretation for IGF Code requirements for fixed fire-extinguishing systems in fuel preparation rooms as IACS Unified Interpretation (UI) GF13 in June 2018. This unified interpretation has already been incorporated into the NK Rules.

Although the IGF Code is intended to apply to newly constructed ships using low-flashpoint fuels, it has been reviewed and amended to provide additional interpretations and make other changes as deemed necessary by the IMO since entering into force. Most recently, amendments to the code were adopted as resolutions MSC.458(101) and MSC.475(102) respectively at 101<sup>st</sup> and 102<sup>nd</sup> sessions of Maritime Safety Committee and these amendments will enter into force on 1 January 2024.

As a result of the above, IACS also revised UI GF13 to reflect the changes made by the aforementioned IMO amendments, and this revised version was adopted as UI GF13(Rev.1) in May 2023.

Accordingly, relevant requirements are amended based on MSC.458(101), MSC.475(102) and UI GF13(Rev.1).

### Outline of Amendment

- (1) Amend requirements related to loading limits for liquefied gas fuel tanks and the installation of pressure relief systems provided for fuel containment systems.
- (2) Add the requirements related to secondary barriers fitted for gaseous fuel pipes, liquefied fuel pipes and fuel gas vent pipes passing through enclosed spaces.
- (3) Add requirements related to the arrangement and fire integrity of fuel storage hold spaces.
- (4) Amend and transfer requirements related to fixed fire-extinguishing systems in fuel preparation rooms.

“Rules for the survey and construction of steel ships” has been partly amended as follows:

## **Part GF SHIPS USING LOW-FLASHPOINT FUELS**

### **Chapter 6 FUEL CONTAINMENT SYSTEM**

#### **6.7 Pressure Relief System (IGF Code 6.7)**

##### **6.7.1 General**

Sub-paragraph -1 has been amended as follows.

**1** All fuel storage tanks are to be provided with a pressure relief system appropriate to the design of the fuel containment system and the fuel being carried. Fuel storage hold spaces, interbarrier spaces, and tank connection spaces and tank cofferdams, which may be subject to pressures beyond their design capabilities, are also not to be provided with a suitable pressure relief system. Pressure control systems specified in 6.9 are to be independent of the pressure relief systems.

#### **6.8 Loading Limit for Liquefied Gas Fuel Tanks (IGF Code 6.8)**

##### **6.8.1 Loading Limit**

Sub-paragraph -3 has been added as follows.

**1** Storage tanks for liquefied gas are not to be filled to more than a volume equivalent to 98 % full at the reference temperature as defined in 2.2.1-36. A loading limit curve for actual fuel loading temperatures is to be prepared from the following formula:

$$LL = FL \frac{\rho_R}{\rho_L}$$

*LL* : loading limit as defined in 2.2.1-27, expressed in per cent

*FL* : filling limit as defined in 2.2.1-16 expressed in per cent, here 98 %

$\rho_R$  : relative density of fuel at the reference temperature

$\rho_L$  : relative density of fuel at the loading temperature

**2** 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 %. This also applies in cases where a second system for pressure maintenance is installed, (refer to 6.9). However, if the pressure can only be maintained / controlled by fuel consumers, the loading limit as calculated in 6.8.1-1 is to be used.

**3** Notwithstanding-2 above, for the 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 consideration may be made to allow a higher loading limit than calculated using the reference temperature, but never above 95 %.

## Chapter 9 FUEL SUPPLY TO CONSUMERS

### 9.5 Fuel Distribution Outside of Machinery Space (*IGF Code 9.5*)

#### 9.5.1 Fuel Pipes\*

Where fuel pipes pass through enclosed spaces in the ship, they are to 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 is to be mechanically underpressure ventilated with 30 air changes per hour, and gas detection as required in 15.8 is to be provided. Other solutions providing an equivalent safety level may also be accepted by the Society.

Paragraph 9.5.2 has been amended as follows.

#### 9.5.2 Fuel Gas Vent Pipes

The requirement in 9.5.1 need not be applied for fully welded fuel gas vent pipes led through mechanically ventilated spaces.

Paragraph 9.5.3 has been added as follows.

#### 9.5.3 Alternative Arrangement)

Requirements 9.5.4 to 9.5.6 apply to ships constructed on or after 1 January 2024 in lieu of requirements 9.5.1 and 9.5.2.

Paragraph 9.5.4 has been added as follows.

#### 9.5.4 Gaseous Fuel Pipes\*

Where gaseous fuel pipes pass through enclosed spaces in the ship, they are to 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 is to be mechanically under pressure ventilated with 30 air changes per hour, and gas detection as required in 15.8 is to be provided. Other solutions providing an equivalent safety level may also be accepted by the Administration.

Paragraph 9.5.5 has been added as follows.

#### 9.5.5 Fuel Gas Vent Pipes

Requirement 9.5.4 need not be applied to fully welded fuel gas vent pipes led through mechanically ventilated spaces.

Paragraph 9.5.6 has been added as follows.

#### 9.5.6 Liquefied Fuel Pipes

Liquefied fuel pipes are to 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 are to be provided with leakage detection by means of pressure or temperature monitoring systems, or any combination thereof. The secondary enclosure is to 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.

## Chapter 11 FIRE SAFETY

### 11.3 Fire Protection (*IGF Code 11.3*)

#### 11.3.1 General\*

Sub-paragraph -3 has been amended as follows:

(-1 to -2 are omitted.)

**3** The space containing fuel containment system is to be separated from the machinery spaces of category *A* or other rooms with high fire risks. The separation is to be done by a cofferdam of at least 900 *mm* with insulation of “*A-60*” class. When determining the insulation of the space containing fuel containment system from other spaces with lower fire risks, the fuel containment system is to be considered as a machinery space of category *A*, in accordance with **Chapter 9, Part R**. ~~The boundary between spaces containing fuel containment systems is to be either a cofferdam of at least 900 *mm* or “*A-60*” class division.~~ For type *C* tanks, the fuel storage hold space may be considered as a cofferdam.

- (1) Notwithstanding the last sentence of -3 above, for ships constructed on or after 1 January 2024, the fuel storage hold space may be considered as a cofferdam provided that:
- (a) the type *C* tank is not located directly above machinery spaces of category *A* or other rooms with high fire risk; and
  - (b) 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*.

Section 11.8 has been added as follows.

### 11.8 Fuel Preparation Room Fire-Extinguishing Systems (*IGF Code 11.8*)

#### 11.8.1 General

For ships constructed on or after 1 January 2024, fuel preparation rooms containing pumps, compressors or other potential ignition sources are to be provided with a fixed fire-extinguishing system complying with the requirements specified in Chapter 25 to Chapter 27, Part R and taking into account the necessary concentrations/application rate required for extinguishing gas fires.

## Chapter 14 ELECTRICAL INSTALLATIONS

### 14.3 General Requirements (*IGF Code 14.3*)

Paragraph 14.3.7 has been amended as follows.

#### 14.3.7 Low-liquid Level Alarm\*

Arrangements are to be made to alarm in low-liquid level and automatically shutdown the motors in the event of low-low liquid level. The automatic shutdown may be accomplished by sensing low pump discharge pressure, low motor current, or low-low liquid level. This shutdown is to give an audible and visual alarm on the navigation bridge, continuously manned central control station or onboard safety centre.

## Chapter 15 CONTROL, MONITORING AND SAFETY SYSTEMS

### 15.4 Bunkering and Liquefied Gas Fuel Tank Monitoring (*IGF Code 15.4*)

Paragraph 15.4.10 has been amended as follows.

#### 15.4.10 Protective Devices for Submerged Fuel-pump Motors\*

For submerged fuel-pump motors and their supply cables, arrangements are to be made to alarm in low-liquid level and automatically shutdown the motors in the event of low-low liquid level. The automatic shutdown may be accomplished by sensing low pump discharge pressure, low motor current, or low-low liquid level. This shutdown is to give an audible and visual alarm on the navigation bridge, continuously manned central control station or onboard safety centre.

“Guidance for the survey and construction of steel ships” has been partly amended as follows:

## **Part B CLASS SURVEYS**

### **B1 GENERAL**

#### **B1.1 Surveys**

##### **B1.1.3 Intervals of Class Maintenance Surveys**

Sub-paragraph -3 has been amended as follows.

(-1 to -2 are omitted.)

**3** The Occasional Surveys specified in **1.1.3-3(5), Part B of the Rules** are as specified below:

((1) to (21) are omitted.)

(22) Ships using low-flashpoint fuels

- (a) For ships that fall under the following **i) or ii)**, a survey is to be carried out to verify compliance with the requirements of **Part GF of the Rules** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Ships which convert to using low-flashpoint fuels on or after 1 January 2017; or
  - ii) Ships which, on or after 1 January 2017, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 January 2017.
- (b) For ships that fall under the following **i) or ii)**, a survey is to be carried out to verify compliance with the requirements of **GF11.3.1-1, GF11.3.1-2, GF12.5.2-2 and GF15.10.1, Part GF of the Guidance** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Ships which convert to using low-flashpoint fuels on or after 1 July 2019; or
  - ii) Ships which, on or after 1 July 2019, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 July 2019.
- (c) For ships that fall under the following **i) or ii)**, a survey is to be carried out to verify compliance with the requirements of **11.8.1, Part GF of the Rules and GF11.3.1-2, Part GF of the Guidance** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Ships which convert to using low-flashpoint fuels on or after 1 January 2024; or
  - ii) Ships which, on or after 1 January 2024, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 January 2024.

((23) to (24) are omitted.)

## **Part GF SHIPS USING LOW-FLASHPOINT FUELS**

### **GF9 FUEL SUPPLY TO CONSUMERS**

#### **GF9.5 Fuel Distribution Outside of Machinery Spaces**

##### **GF9.5.1 Fuel Pipes**

In cases where double wall piping with vacuum used as secondary enclosure is adopted as “other solutions” specified in **9.5.1, Part GF of the Rules**, appropriate means capable of detecting loss of vacuum are to be provided, in addition to applying **2.2.1-37, Part GF of the Rules**.

Paragraph GF9.5.4 has been added as follows.

##### **GF9.5.4 Gaseous Fuel Pipes**

In cases where double wall piping with vacuum used as secondary enclosure is adopted as “other solutions” specified in **9.5.4, Part GF of the Rules**, appropriate means capable of detecting loss of vacuum are to be provided, in addition to applying **2.2.1-37, Part GF of the Rules**.

### **GF11 FIRE SAFETY**

#### **GF11.3 Fire Protection**

Paragraph GF11.3.1 has been amended as follows.

##### **GF11.3.1 General**

(-1 is omitted.)

**2** In applying **11.3.1-1, Part GF of the Rules**, any enclosed spaces containing equipment for fuel preparation such as pumps or compressors or other potential ignition sources are to be provided with a fixed fire extinguishing system complying with any one of the requirements specified in ~~Chapter 25 to Chapter 27, Part R of the Rules and taking into account the necessary concentrations / application rate required for extinguishing gas fires~~ **11.8.1, Part GF of the Rules**.

“Guidance for high speed craft” has been partly amended as follows:

## **Part 2 CLASS SURVEYS**

### **Chapter 1 GENERAL**

#### **1.1 Surveys**

##### **1.1.3 Occasional Surveys**

Sub-paragraph (3) has been amended as follows.

For the occasional surveys specified in **1.1.3(5), Part 2 of the Rules**, the following is to be complied with:

((1) and (2) are omitted.)

(3) Crafts Using Low-flashpoint Fuels

- (a) For crafts that fall under the following **i) or ii)**, a survey is to be carried out to verify compliance with the requirements of **1.1.8, Part 1 of the Rules** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Crafts which convert to using low-flashpoint fuels on or after 1 January 2017; or
  - ii) Crafts which, on or after 1 January 2017, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 January 2017.
- (b) For ships that fall under the following **i) or ii)**, a survey is to be carried out to verify compliance with the requirements of **GF11.3.1-1, GF11.3.1-2, GF12.5.2-2 and GF15.10.1, Part GF of the Guidance for the Survey and Construction of Steel Ships**. before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Ships which convert to using low-flashpoint fuels on or after 1 July 2019; or
  - ii) Ships which, on or after 1 July 2019, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 July 2019.
- (c) For ships that fall under the following **i) or ii)**, a survey is to be carried out to verify compliance with the requirements of **11.8.1, Part GF of the Rules for the Survey and Construction of Steel Ships and GF11.3.1-2, Part GF of the Guidance for the Survey and Construction of Steel Ships** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Ships which convert to using low-flashpoint fuels on or after 1 January 2024; or
  - ii) Ships which, on or after 1 January 2024, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 January 2024.

“Guidance for the survey and construction of inland waterway ships” has been partly amended as follows:

## **Part 2 CLASS SURVEYS**

### **Chapter 1 GENERAL**

#### **1.1 Surveys**

##### **1.1.2 Class Maintenance Surveys**

Sub-paragraph -1 has been amended as follows.

**1** Modifications and changes that are subject to Occasional Surveys referred to in **1.1.2-2(3), Part 2 of the Rules** are as specified in (1) through (5) below:

((1) to (4) are omitted.)

**(5) Ships Using Low-flashpoint Fuels**

- (a) For ships that fall under the following **i)** or **ii)**, a survey is to be carried out to verify compliance with the requirements of **1.1.8, Part 1 of the Rules** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Ships which convert to using low-flashpoint fuels on or after 1 January 2017; or
  - ii) Ships which, on or after 1 January 2017, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 January 2017.
- (b) For ships that fall under the following **i)** or **ii)**, a survey is to be carried out to verify compliance with the requirements of **GF11.3.1-1, GF11.3.1-2, GF12.5.2-2 and GF15.10.1, Part GF of the Guidance for the Survey and Construction of Steel Ships** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Ships which convert to using low-flashpoint fuels on or after 1 July 2019; or
  - ii) Ships which, on or after 1 July 2019, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 July 2019.
- (c) For ships that fall under the following **i)** or **ii)**, a survey is to be carried out to verify compliance with the requirements of **11.8.1, Part GF of the Rules for the Survey and Construction of Steel Ships and GF11.3.1-2, Part GF of the Guidance for the Survey and Construction of Steel Ships** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:
  - i) Ships which convert to using low-flashpoint fuels on or after 1 January 2024; or
  - ii) Ships which, on or after 1 January 2024, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 January 2024.

“Guidance for the survey and construction of passenger ships” has been partly amended as follows:

## **Part 2 CLASS SURVEY**

### **Chapter 1 GENERAL**

#### **1.1 Surveys**

##### **1.1.3 Intervals of Class Maintenance Surveys**

Sub-paragraph -1 has been amended as follows.

**1** For the application of the requirements of **1.1.3-3, Part 2 of the Rules**, in addition to the requirements specified in **B1.1.3-9 (except for (22)), Part B of the Guidance for the Survey and Construction of Steel Ships**, occasional surveys are to be in accordance with those specified in **(1) to (7)** below:

((1) to (5) are omitted.)

**(6) Ships Using Low-flashpoint Fuels**

(a) For ships that fall under the following **i) or ii)**, a survey is to be carried out to verify compliance with the requirements of **1.1.6, Part 1 of the Rules** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:

i) Ships which convert to using low-flashpoint fuels on or after 1 January 2017; or

ii) Ships which, on or after 1 January 2017, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 January 2017.

(b) For ships that fall under the following **i) or ii)**, a survey is to be carried out to verify compliance with the requirements of **GF11.3.1-1, GF11.3.1-2, GF12.5.2-2 and GF15.10.1, Part GF of the Guidance for the Survey and Construction of Steel Ships** before using low-flashpoint fuels or undertaking to use different low-flashpoint fuels than specified:

i) Ships which convert to using low-flashpoint fuels on or after 1 July 2019; or

ii) Ships which, on or after 1 July 2019, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 July 2019.

(c) For ships that fall under the following **i) or ii)**, surveys are to be carried out to verify compliance with **11.8.1, Part GF of the Rules for the Survey and Construction of Steel Ships and GF11.3.1-2, Part GF of the Guidance for the Survey and Construction of Steel Ships** before beginning to use low-flashpoint fuels for the first time or before undertaking to use low-flashpoint fuels different from those approved to use:

i) Ships which convert to using low-flashpoint fuels on or after 1 January 2024; or

ii) Ships which, on or after 1 January 2024, undertake to use low-flashpoint fuels different from those which they were originally approved to use before 1 January 2024.