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MINISTRY OF PORTS, SHIPPING AND WATERWAYS

NOTIFICATION

New Delhi, the_____ 2026

G.S.R. _____(E).—In exercise of the powers conferred by sub-section (1) and (2) of section 116 read with sub-section (1) and clause (a) and (b) sub-section (2) of section 130 under Part VI of the Merchant Shipping Act, 2025 (24 of 2025), the Central Government hereby makes the following rules, namely

1. **Short title, commencement:**

(1) These rules may be called the **Merchant Shipping (Use of Liquified Gases as Fuel Appliances) Rules, 2026.**

(2) They shall come into force on the date of their publication in the Official Gazette.

(3)For the purpose of these provisions, these rules shall apply to vessels for which — the building contract is placed on or after 1 January 2017; or the keels is laid or is at a similar stage of construction on or after 1 July 2017 (in the absence of a building contract); or the delivery date is on or after 1 January 2021; unless otherwise notified by the Directorate General of Maritime Administration.

(4) Subsequent amendments adopted to these Rules shall apply to vessels whose keels are laid or which are at a similar stage of construction on or after the effective date such respective amendments, unless expressly provided otherwise.

(5) They shall not apply to any such vessel or sailing vessel the keel of which was laid before the 1 July 2017 and the provisions of the IGC code shall apply to such vessel or sailing vessel.

Provided that the Director General of Marine Administration may after the commencement of these rules, require by order in writing, the owner of any such vessel or sailing vessel, having regard to any structural changes made in such vessel or sailing vessel, to comply with any or all of the requirements specified in these rules.

(6) The Merchant Shipping Rule 6 of 2024 is hereby superseded by these rules, except as respects things done or omitted to be done under the said rules.

(7) The purpose of these rules is to inform Owners/Operators, Recognized Organizations, Masters, and relevant stakeholders on the applicable procedures regarding the IGF Code and its amendments. The International Code of safety for

vessels using gases or other low- flashpoint fuels (IGF Code) was adopted by the Maritime Safety Committee of the IMO by Resolutions MSC. 391 (95) and MSC. 392 (95), which have subsequently been amended. The IGF Code is defined in SOLAS II- 1/2.29, and through the new part G in Chapter II-1 of SOLAS Convention, the application and requirements to vessels using low-flashpoint fuel is established (refer to SOLAS II-1/56 and 57).

(8) The current version of the Code includes regulations to meet the functional requirements for natural gas fuel. Regulations for other low-flashpoint fuels will be added to the IGF Code as, and when, they are developed by the Organization. In the meantime, for other low-flashpoint fuels, compliance with the functional requirements of the IGF Code must be demonstrated through alternative design procedures. Regulations governing other low-flashpoint fuels shall be incorporated into the IGF Code as and when such provisions are developed and adopted by the Recognised Organisation.

2. Application and Implementation

2.1. The code applies to vessels governed by part G of chapter II-1 of the International Convention for the Safety of Life at Sea (SOLAS); therefore, new vessel using gases or other low-flashpoint fuels shall comply with the requirements of the IGF code, its mandatory provisions for the arrangement, installation, control and monitoring of machinery, equipment and systems using low-flashpoint fuels, focusing initially on liquefied natural gas (LNG).

2.2. The IGF Code entered into force on 1 January 2017, and establishes an international standard for vessel using gases or other low-flashpoint fuels for propulsion (Low-flashpoint fuel means gaseous or liquid fuel having a flashpoint lower than otherwise permitted under SOLAS regulation II-2/4.2.1.1). It contains mandatory provisions for the arrangement, installation, control and monitoring of machinery, equipment and systems using low-flashpoint fuels, focusing currently on LNG.

2.3. The IGF Code applies to vessels using low-flashpoint fuels or which:

2.3.1. the building contract is placed on or after 1 January 2017,

2.3.2. the keels of which are laid or which are at a similar stage of construction on or after 1 July 2017 (in the absence of a building contract), or

2.3.3.the delivery of which is on or after 1 January 2021.

For determining the date of delivery, reference shall be made to the application of SOLAS Chapter II-1, Part G, Regulation 56 and IACS Unified Interpretation SC256; alternatively, compliance with Clause 2.3 of MS Notice No. 06 of 2024 shall be deemed sufficient.

2.4. Vessels which commence a conversion on or after 1 January 2017 to use low- flashpoint fuels (or use additional or different low-flashpoint fuels other than those for which the vessel was originally certified) will also be required comply with the IGF Code (see SOLAS regulation II-1/56).

2.5. Upon completion of construction, a vessel Classification Society, acting as a Recognized Organization (RO) for the Administration, shall issue either a Safety Construction Certificate for Passenger Vessels, indicating that the vessel complies with “part G of chapter II-1 of the Convention using “LNG” as fuel.

3. Definitions

All definitions not explicitly set out herein shall bear the meaning assigned to them in the IGF Code, as amended.

Unless otherwise stated below, the following definitions are those from SOLAS chapter II-2:

Administration means The Directorate General of Maritime Administration.

3.1. Bunkering means the transfer of liquid or gaseous fuel from land based or floating facilities into a vessels' permanent tanks or connection of portable tanks to the fuel supply system.

3.2. Dual fuel engines means engines that employ fuel covered by this Code (with pilot fuel) and oil fuel. Oil fuels may include distillate and residual fuels.

3.3. Fuel containment system is the arrangement for the storage of fuel including tank connections. It includes where fitted, a primary and secondary barrier, associated insulation and any intervening spaces, and adjacent structure if necessary for the support of these elements. If the secondary barrier is part of the hull structure it may be a boundary of the fuel storage hold space.

3.4. Gas means a fluid having a vapour pressure exceeding 0.28 MPa absolute at a temperature of 37.8°C.

3.5. Hazardous area means an area in which an explosive gas atmosphere is or may be expected to be present, in quantities such as to require special precautions for the construction, installation and use of equipment.

3.6. High pressure means a maximum working pressure greater than 1.0 MPa.

3.7. LEL means the lower explosive limit.

3.8. LNG means liquefied natural gas

3.9. Loading limit (LL) means the maximum allowable liquid volume relative to the tank volume to which the tank may be loaded.

3.10. Low-flashpoint fuel means gaseous or liquid fuel having a flashpoint lower than otherwise permitted under paragraph 2.1.1 of SOLAS regulation II-2/4.

3.11. Risk is an expression for the combination of the likelihood and the severity of the consequences.

3.12. Unacceptable loss of power means that it is not possible to sustain or restore normal operation of the propulsion machinery in the event of one of the essential auxiliaries becoming inoperative, in accordance with SOLAS regulation II-1/26.3.

These rules shall incorporate the International Code of Safety for Vessels Using Gases or Other Low-Flashpoint Fuels (IGF Code), as amended from time to time by the International Maritime Organization and mandated under SOLAS. Any amendment to the IGF Code, upon

adoption by the IMO and entry into force, shall automatically apply to these rules unless otherwise notified by the Directorate General of Maritime Administration.

4. Design

4.1 Vessels to which this MS Rule applies shall be designed in accordance with the applicable requirements of the IGF Code.

4.2 [Amendment per MSC. 551 (108)] All airlocks constructed on or after 1 January 2026 shall have self-closing gastight doors spaced 1.5 m to 2.5 m apart, and shall be ventilated at a minimum of 12 air changes per hour with over-pressure relative to adjacent hazardous areas. Unless subject to the requirements of the International Convention on Load Line, the sill height of the door leading to the hazardous area shall not be less than 300 mm. The provision is incorporated within the IGF Code in Regulation 5.12.1 governing airlocks.

4.3 Ventilation ductwork passing through non-hazardous spaces shall conform to IGF 9.8 and be constructed of approved non-combustible material with integral gas detection and alarm systems.

4.4 Deck structures situated above fuel tanks on open deck shall be provided with thermal insulation so that the temperature rise on the opposite boundary does not exceed 180 °C within 30 minutes of fire exposure, in accordance with amended paragraph 6.7.3.1.1.In accordance with IGF Code paragraph 6.7.1.1, a factor of F = 0.5 shall apply for tanks located above deck, and certification through type testing of the product shall be required to verify the insulation properties under fire conditions. The referenced clause prescribes the requirements for sizing the pressure relief valve, wherein the calculation factor F shall be determined based on the fireproofing material, the thermal conductance of the insulation, and its stability under fire exposure.

4.5 The design shall be approved by a Recognized Organisation.

5. Construction

5.1 Vessels to which this rule applies shall be constructed in accordance with the applicable requirements of the IGF Code.

5.2 Construction shall be approved and supervised by a Recognized Organisation.

5.3 Upon completion of construction, the Recognized Organization, shall issue applicable Safety Construction Certificate, indicating that the vessel complies with “part G of chapter II-1 of the Convention using “LNG” as fuel.”

5.4 Vent mast outlets for liquefied gas fuel tanks shall maintain a minimum hazardous zone radius of 6 m (Zone 1) and 4 m (Zone 2) from any air intake, open flame or sparking equipment. Pressure relief vent discharges may be led to other fuel tanks when permitted by the Administration and fitted with non-return valves and flame screens. The requirement concerning the height of vent mast exits is specified under IGF Code, Clause 6.7.2.7.3, which provides the applicable details. Any proposal for lowering the height of the vent mast shall be accompanied by a detailed technical justification, with specific reference to Hazardous Area Classification in accordance with IGF Code, Section 12.5, and IEC 60092-502, Part 4.4 to the approval of administration.

6. Alternative design.

6.1. The Code contains functional requirements for all appliances and arrangements related to the usage of low-flashpoint fuels.

6.2. Fuels, appliances and arrangements of low-flashpoint fuel systems may either:

6.2.1 deviate from those set out in this Code, or

6.2.2 be designed for use of a fuel not specifically addressed in this Code.

6.2.3 Such fuels, appliances and arrangements can be used provided that these meet the intent of the goal and functional requirements concerned and provide an

equivalent level of safety of the relevant chapters.

6.3 The equivalence of the alternative design shall be demonstrated as specified in SOLAS regulation II-1/55 and approved by Recognized Organizations authorized by the Administration in line with DGS order 6 of 2013. However, the Administration shall not allow operational methods or procedures to be applied as an alternative to a particular fitting, material, appliance, apparatus and item of equipment, or type thereof which is prescribed by the Code.

7. Operating Requirements

7.1 Every vessel covered by this rule

7.2 shall carry a copy of the IGF Code on board. Electronic versions are acceptable.

7.3 Maintenance procedures and information for all gas related installations shall be available on board and shall include all areas and systems that may be subject to gas leaks and their associated hazards.

7.4 Each vessel shall be provided with a suitably detailed fuel handling manual, to ensure that trained personnel can safely operate the fuel bunkering, storage, and transfer systems. The contents of this fuel handling manual are more fully described in paragraph 8.4 of this rule.

7.5 Each vessel shall be provided with suitable emergency procedures, covering all aspects of the fuel handling systems. In addition, emergency procedures shall be in place to provide for the emergency shutdown (ESD) of any equipment that has the potential to become hazardous under certain abnormal conditions.

7.6 The failure of any single component of the fuel supply system shall not result in a complete loss of propulsion power. Systems shall be designed to allow partial reduction of power under safe conditions, in accordance with amended paragraph 9.3.1 of the IGF Code. For acceptance of any partial reduction in propulsion capability from

normal operation, reference shall be made to SOLAS Regulation II-1/26.3 and a comprehensive risk assessment addressing overall safety considerations.

7.7 Each liquefied gas fuel tank shall be provided with two independent level gauging devices and a high-level alarm system. At least one device shall be continuous reading type approved for cryogenic service, as stipulated in MSC. 551 (108) A-1/15.4.1.

7.8 Where only one liquid level gauge is fitted it shall be arranged so that it can be maintained in an operational condition without the need to empty or gas-free the tank.

7.9 Liquefied gas fuel tank liquid level gauges may be of the following types:

7.9.1 indirect devices, which determine the amount of fuel by means such as weighing or in-line flow metering; or

7.9.2 closed devices, which do not penetrate the liquefied gas fuel tank, such as devices using radio-isotopes or ultrasonic devices;

8. Bunkering Operations

8.1 Before any bunkering operation commences, the Master of the receiving vessel or their designated representative, and the representative of the bunkering source (Persons In Charge (PIC)) shall:

8.1.1 agree in writing to the transfer procedure, including cooling down and if necessary, gassing up, the maximum transfer rate at all stages, and volume to be transferred;

8.1.2 agree in writing action to be taken in an emergency; and

8.1.3 complete and sign the bunkering safety checklist.

8.2 In accordance with paragraph 6.8.1 of the IGF Code, the storage tanks for liquefied gas shall not be filled to more than a volume equivalent to 98% full at the reference temperature during the bunkering operations.

8.3 Upon completion of bunkering operations, the vessels PIC shall receive and sign a Bunker Delivery Note for the fuel delivered,

containing at least the information specified in Annex- I to this rule, completed and signed by the bunkering source PIC.

8.4 The fuel handling manual required by paragraph 7.3 of this rule shall be part of the vessel's Safety Management System (SMS) and shall include, but not be limited to:

8.4.1 overall operation of the vessel from dry-dock to dry-dock, including procedures for system cool down and warm up, bunker loading and, where appropriate, discharging, sampling, inerting, and gas freeing;

8.4.2 bunker temperature and pressure control, alarm, and safety systems;

8.4.3 system limitations, cool down rates, and maximum fuel storage tank temperatures prior to bunkering, including minimum fuel temperatures, maximum tank pressures, transfer rates, filling limits, and sloshing limitations;

8.4.4 All bunkering manifolds on vessels constructed on or after 1 January 2026 shall comply with design pressure testing and electrical continuity in accordance with MSC.551 (108) A-1/8.4. Each manifold shall be fitted with an emergency release coupling compatible with ISO 21593: 2019 (dry-disconnect type). The requirement shall be defined to include type testing of dry-disconnect/connect couplings intended for LNG bunkering, in accordance with ISO 21593, as amended, and ISO 20519, as amended, for specification compliance.

8.4.5 operation of inert gas systems;

8.4.6 firefighting and emergency procedures, including the operation and maintenance of firefighting systems, and the use of extinguishing agents;

8.4.7 specific fuel properties and special equipment needed for the safe handling of the particular fuel;

8.4.8 fixed and portable gas detection operation and maintenance of equipment;

8.4.9 emergency shutdown and emergency release systems, where fitted;

8.4.10 a pro forma bunkering safety checklist, a copy of which is to be reviewed, completed, and signed during each bunkering operation; and

8.4.11 a description of the procedural actions to be taken in an emergency situation, such as leakage, fire or potential fuel stratification resulting in rollover.

8.5 Documentation of successful verification shall be indicated by the mutually agreed and executed bunkering safety checklist signed by both PICs.

8.6 PICs shall have direct and immediate communication with all personnel involved in the bunkering operation, and such communication shall be maintained between both PICs at all times during the bunkering operations.

8.7 Communication devices used in bunkering shall comply with recognized standards for such devices acceptable to the Administration. The vessel shore link (VSL) or equivalent means to a bunkering source provided for automatic ESD communications, shall be compatible with the receiving vessel and the delivering facility ESD system.

8.8 Hoses, transfer arms, piping, and fittings provided by the delivering facility used for bunkering shall be electrically continuous, suitably insulated, and shall provide a level of safety compliance with recognized standards.

8.9 Warning signs shall be posted at the access points to the bunkering area listing fire safety precautions during fuel transfer.

8.10 During the transfer operations, personnel in the bunkering manifold area shall be limited to essential staff only. All staff engaged in duties or working in the vicinity of the operations shall wear appropriate personal protective equipment (PPE). A failure to maintain the required conditions for transfer shall be cause to stop operations, and transfer shall not be resumed until all required conditions are met.

9 Maintenance Requirements

9.1 All maintenance and repair procedures shall include considerations for tank locations and adjacent spaces, taking into account the safe operation and other hazards that may be relevant to the vessel.

9.2 An inspection/survey plan for the liquefied gas fuel containment system shall be developed and approved by Administration or by RO acting on behalf of the administration. The inspection/survey plan shall identify aspects to be examined and/or validated during surveys throughout the life of the liquefied gas fuel containment system. It shall also identify any necessary in-service survey, maintenance, and testing that was assumed when selecting liquefied gas fuel containment system design parameters. All in-service survey, maintenance, and testing of the fuel containment system must be carried out in accordance with that plan.

9.3 The procedures and information shall include maintenance of electrical equipment that is installed in explosion hazardous spaces. The inspection and maintenance of electrical installations in explosion hazardous spaces shall be performed in accordance with a recognized standard.

9.4 An Inspection/Survey Plan covering the fuel containment system shall be submitted and approved by the Administration or an Recognized Organization acting on behalf of the Administration. The plan shall identify critical regions, inspection methods, service intervals and renewal tests, in line with paragraph 6.4.1.8 of the IGF Code.

10 Enclosed Space Entry

10.1 Under normal operational circumstances, personnel shall not enter fuel tanks, fuel storage hold spaces, void spaces, tank connection spaces, or other enclosed spaces where gas or flammable vapours may accumulate. Personnel may enter these enclosed spaces only if the gas content of the atmosphere in such space is determined by means of fixed or portable equipment to ensure oxygen sufficiency and absence

of an explosive atmosphere.

10.2 Personnel entering any space designated as a hazardous area shall not introduce any potential source of ignition into the space unless it has been certified gas-free and maintained in that condition.

11 Risk Assessment

11.1 A Formal Safety Assessment (FSA) shall be conducted for each new fuel installation covering design, operation and maintenance risk. The assessment shall use recognized techniques such as HAZOP, FTA, or PRA (ISO 31010 / MSC.1/Circ.1627). All risks with Residual Risk ≥ “Moderate” must be mitigated by engineering controls.

11.2 The approved risk analysis shall be attached to the Vessel Construction File (Form MSC-IGF/2025) and retained for the life of the vessel.

12 Drills And Emergency Exercises

12.1 Drills and emergency exercises on board shall be conducted at regular intervals.

12.2 Gas-related emergency exercises shall include at least one joint tabletop drill per annum with port-authority participation covering bunkering incident scenarios, fuel leakage response, and integration of ship–shore link communication (SSL). Reports of such drills shall be retained for audit.

13. Training

13.1 Companies shall ensure that seafarers on board vessel using gases or other low- flashpoint fuels shall be qualified and certificated in accordance with the new training requirements as detailed in DGS Circular (NT/ENG) 03 of 2021 for service on board vessel subject to the IGF Code

(Regulation V/3), having successfully completed approved training and provided evidence of meeting seagoing service and experience requirements and the training requirements for service on board liquefied gas tankers and completed training as mentioned in DGS STCW 2O1O CIRCULAR NO. 13 OF 2OI9 and DGS STCW 2O1O CIRCULAR NO. 14 OF 2OI9 to attain the abilities that are appropriate to the capacity to be filled and duties and responsibilities to be taken up, taking into account the provisions given in the STCW Convention and Code, as amended, and hold an appropriate certificate.

13.2 Personnel on vessels classified for use of hydrogen, ammonia, or methanol as fuel shall complete DGS-approved training modules for each specific fuel category in accordance with STCW V/3 and the IMO Model Courses for Advanced Training on Alternative Fuel Operations (2025 revision).

13.3 All training and certification requirements shall be specified by the Directorate General of Maritime Administration under appropriate legal authority, with reference to relevant IMO Model Courses and national circulars. Only those standards for which express legislative authority exists may be mandated.

14. Documentation and Records

Data storage retention minimum – 10 years post decommissioning of system.

ANNEX - I

LNG-BUNKER DELIVERY NOTE*

LNG AS FUEL FOR

VESSEL NAME:_____IMO NO.:_____

Date of delivery: _____ Port _____

1. **LNG-Properties**

Methane number ”	-	
Lower calorific (heating) value	MJ/kg	
Higher calorific (heating) value	MJ/kg	
Wobbe Indices Ws / Wi	MJ/m*	
Density	kg/m°	
Pressure	MPa (abs)	
LNG temperature delivered	°C	
LNG temperature in storage tank(s)	°C	
Pressure in storage tank(s)	MPa (abs)	

2. **LNG-Composition**

Methane, CH4	%	
	(kg/kg)	
Ethane, C He	% (kg/kg)	

Propane, C Hs	% (kg/kg)	
lsobutane, i C4H,o	% (kg/kg)	
N-Butane, n C,H,a	% (kg/kg)	
Pentane, C H‹	% (kg/kg)	
Hexane; CsH14	% (kg/kg)	
Heptane; C7H,»	% (kg/kg)	
Nitrogen, N	% (kg/kg)	
Sulphur, S	% (kg/kg)	
negligible<5ppm hydrogen sulphide, hydrogen, ammonia, chlorine, fluorine, water		

3. Net Total delivered:_____t,_____MJ

m^3

Net Liquid delivery:_____GJ

4. **Signature(s):**

Supplier Company Name, contact details: _____

Signature:_____Place/Port_____date:

_____ Receiver:

_____

* The LNG properties and composition allow the operator to act in accordance with the known properties of the gas and any operational limitations linked to that.

** Preferably above 70 and referring to the used methane number calculation method in DIN EN 16726. This does not necessarily reflect the methane

number that goes into the engine.

[F. No. _____]