

PORT STATE CONTROL COMMITTEE INSTRUCTION 55/2022/02

PSC Guidelines on IGF Code^{*)}

1. INTRODUCTION

1.1. General

This Guideline is solely drafted for the purpose of providing guidance to the PSCO in performing a PSC inspection on the subject matter. This Guideline does not restrict the PSCO in the scope of inspection or in using his/her professional judgement while performing the PSC inspection. Third parties cannot claim any rights based on this guideline with regard to the PSC inspection as performed by the PSCO.

The Code provides mandatory provisions for the arrangement, installation, control and monitoring of machinery, equipment and systems using low-flashpoint fuels (e.g. LNG, Methanol, Hydrogen etc.) to minimize the risk to ship, its crew and the environment, having regard to the nature of fuels involved. The PSCO conducts an inspection of the ship, which is a sampling process and gives a snapshot of the ship on a particular day.

The current version of the IGF Code includes regulations to meet the functional requirements for natural gas fuel only. Regulations for low-flashpoint fuels other than natural gas fuel is under development by the Organization and will be applicable at a later stage.

For ships using low flash point fuels other than natural gas, Part F of SOLAS Chapter II-1 applies.

1.2. Goals and purpose

The instruction is to provide guidance for the harmonised port State inspection and follow up of deficiencies related to the IGF Code.

1.3. Application

The IGF Code applies to ships to which Part G of SOLAS Chapter II-1 applies. This is given below for ready reference of PSCOs:

The IGF Code applies to ships using low-flashpoint fuels:

1. for which the building contract is placed on or after 1 January 2017;
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 2017; or
3. the delivery of which is on or after 1 January 2021.

Ships of any age undertaking to use low flashpoint fuel since 1 January 2017 which is different from those it was originally approved to use before 1 January 2017, shall be treated as a ship using low-flashpoint fuels on the date which this undertaking commenced.

It does not apply to Gas Carriers, as defined in regulation VII/11.2:

1. using their cargoes as fuel and complying with the requirements of the IGC Code,

- as defined in regulation VII/11.1; or
2. using other low-flashpoint gaseous fuels provided that the fuel storage and distribution systems design and arrangements for such gaseous fuels comply with the requirements of the IGC Code for gas as a cargo.

The IGF Code does not apply to Government ships and used for Government non-commercial service.

1.4. Relevant documentation

- SOLAS
- IGF Code
- MARPOL
- STCW
- Load Line

1.5. Definitions and abbreviations

The PSCC Instruction containing “Definitions and Abbreviations” serves as a general document and is to be used in conjunction with this Paris MoU document. In addition, reference should be made to the IGF Code for definitions which are specific to the IGF Code.

2. INSPECTION OF SHIP

2.1 Pre-boarding preparation

The PSCO should consult the PMoU database to gain an overview of the previous inspection history of the ship including any outstanding deficiencies and the performance of the company. The EQUASIS database may also be consulted for more information on the performance history.

The pre-boarding preparation, composition of the inspection team, the approach to the ship, the boarding of the ship and the initial inspection should be carried out in accordance with PMoU procedures.

2.2 Initial Inspection

During the initial inspection, the PSCO should verify that the ship carries relevant documentation pertaining to the use of low-flashpoint fuels, such as:

- IGF Code certification
 - Appropriate survey statement in paragraph 2.2 of the Cargo Ship Safety Construction Certificate or Cargo Ship Safety Certificate or Passenger Ship Safety Certificate (See Annex I)
- IGF Code Training as per the STCW requirements (section V/3)
 - All crew should have attended familiarisation training
 - Crewmembers with designated safety duties shall hold a basic training for service on ship subject to the IGF code and
 - Masters, engineer officers and all personnel with immediate responsibility for the care and use of fuels and fuel systems on ships subject to the IGF Code shall hold a certificate in advanced training for service on ships subject to the IGF

Code (See Annex II)

- Bunker delivery note (Annex III)
- IGF code, or national regulations incorporating the provisions of the IGF code available on board;
- Fuel handling Manual (Reg. 18.4.2.1);

- When bunkering has taken place, a written agreement (signed by both Persons In Charge) should be available (Reg. 18.4);
- Drill records (Reg. 17). Note: It is acceptable for gas related exercises to be incorporated into SOLAS periodical drills

During the walk around extra attention should be given to personal safety with regards to the specific dangers of the IGF fuel used on board. All safety procedures according to the ships ISM system should be followed.

Considerations to be aware of with low flashpoint fuels:

- Explosion-proof, intrinsically safe equipment must be used
- Any leakages of IGF fuels can cause asphyxiation in confined areas, gas monitoring equipment must be used
- Bunkering operations for LNG also use nitrogen, adding further risks
- IGF fuel safety systems will typically shut down all equipment if triggered. It is very important to work with the crew and have an open discussion about what is safe to demonstrate, for the avoidance of harm.

2.3 Clear grounds

The PSCO may establish clear grounds for carrying out a more detailed inspection. The following non exhaustive list may be considered as clear grounds for a more detailed inspection:

- Absence of correct IGF Code certification (Survey Statement on CSSC, PSSC);
- Ship crew not in possession of the necessary certificates
- Missing or malfunction of (safety) equipment and arrangements
- Drills not held according the IGF code
- Evidence of lack of maintenance
- Not following of procedures required by Reg 18.2 of IGF Code
- Signs of IGF related equipment is missing, damaged or not properly used

2.4 More Detailed Inspection

Where clear grounds exist, a more detailed inspection should be conducted by the PSCO. All general requirements for IGF ships are mentioned in part A of the IGF code. Details for an IGF ship using a specific low-flashpoint fuel is mentioned in separate sections. It is expected new sections for different low-flashpoint fuels will be added in due time.

During the inspection extra attention should be given for personal safety due to the dangers involved.

Ships using LNG as Fuel

For all specific information regarding design and construction of a ship using LNG as fuel see part A-1 of the IGF code.

LNG: From the IGF Code the following Chapters are of particular relevance in the context of LNG bunkering:

- Part A Section 3.2 - Functional Requirements
- Part A-1 Chapter 8 – Bunkering (Outline of functional requirements for bunkering equipment (ship-side) with requirements to the Bunkering Station and manifold on board the LNG fuelled ship)
- Part A-1 Section 18.4 – Regulations for Bunkering Operations (description of operational procedures to be followed for LNG bunkering, with the description of the particular responsibilities for the PICs and operational aspects related to communications, control and safety systems and verification of conditions for bunkering)
- Part A-1 Section 15.4 – Regulations for bunkering and liquefied gas fuel tank monitoring (Set of requirements specific for LNG tank filling monitoring, especially relevant during bunkering, both for overfills mitigation and for LNG vapour management)
- Part A-1 Section 15.5 – Regulations for bunkering control (LNG bunkering control aspects, including requirements for LNG bunkering control location).

The following items could be checked during bunkering:

- Correct use of a checklist (e.g. appointed Persons In Charge, safety zones, security etc.)
- Correct use and availability of equipment (e.g. water screen, ESD activation button, PPE, FF etc.)
- Communication
- Safety, Security and Hazardous zones with warning signs
- Simultaneous Operations (SIMOPS) during bunkering

Drills and Emergency Exercises: The IGF Code requires drills and emergency exercises to be conducted on board at regular intervals. Such gas-related exercises could include for example:

- tabletop exercise
- review of fuel handling procedures based on the fuel handling manual
- responses to potential contingencies
- tests of equipment intended for contingency response; and
- reviews that assigned seafarers are trained to perform assigned duties during fuelling and contingency response

Gas related exercises may be incorporated into periodical drills required by SOLAS. The response and safety system for hazards and accident control shall be reviewed and tested.

Procedures:

- maintenance procedures and information for all gas related installations;
- operational procedures including a suitably detailed fuel handling manual, such that trained personnel can safely operate the fuel bunkering, storage and transfer systems;
- suitable emergency procedures pertaining to use of low-flashpoint fuels.

2.5 Expanded Inspection

An expanded inspection should be carried out in accordance with PMoU procedures and

guidelines. There are no additional requirements regarding the IGF Code to follow during an expanded inspection unless clear grounds are identified in which case guidance in paragraph 2.4 should be followed.

3. FOLLOW-UP ACTION

3.1 Possible Deficiencies & Actions to be considered:

Any IGF Code related deficiencies found by the PSCO should be recorded on the Report of Inspection issued by the PSCO using the following codes:

Code	Defective item	Nature of defect	Delay action taken	Convention Reference	Equipment Related? (Y/N)	Detainable? Y/N	RO related? Y/N
01216	Certificate for personnel on ships subject to the IGF Code	Missing, Invalid, Entries missing, Not as required, Expired, Not revalidated	Rectified, At the next port, Within 14 days, Before departure, At an agreed repair port, As in the agreed class condition, As in the agreed flag State condition, Master instructed to ..	STCW Amend 2015 Reg V/3	N	Y	N
01338	LNG Bunker Delivery Note	Missing, Not as required	Rectified. At the next port. Within 14 days. Before departure. As in the agreed flag State condition. Master instructed to...	IGF Code Part C-1 18.4.1.2 and Annex	N	Y	N
04119	IGF Code Drills and Emergency Exercises	Not as required	Rectified. At the next port. Within 14 days. Before departure. As in the agreed flag State condition. Master instructed to ...	IGF Code Part C-1 17	N	Y	N
01339	Copy of IGF Code or national legislation	Missing, Not as required.	Rectified. At the next port. Within 14 days. Before departure. As in the agreed flag State condition. Master instructed to...	IGF Code Part C-1 18.2.1	N	Y	N
13107	Maintenance procedures for all gas related installations	Missing, Not as required.	Rectified. At the next port. Within 14 days. Before departure. As in the agreed flag State condition. Master instructed to...	IGF Code Part C-1 18.2.2	N	Y	N

3.2 Deficiencies warranting detention:

Example of detainable deficiencies relating to the IGF Code are as follows:

- Certificates of vessel or ship staff not in line with the requirements of the IGF Code
- IGF Code drills and emergency exercises not as required
- Training not appropriate and not in accordance with the IGF Code
- Maintenance procedures not available

The PSCO should use professional judgement to decide whether the deficiencies are detainable or not and whether an ISM related deficiency should also be reported.

In case of detention, the PSCO should refer to the applicable procedures under section 3 of the PMoU text and the PSCC Instruction "Guidance on action taken including detention".

4. **REPORTING:**

4.1 Reports:

The PSCO must record the inspection in the information system. If deficiencies are found, they must be recorded. If a detention is imposed, procedures related to detention must be used. The PSCO should explain the defect in the additional comments field on the Report of Inspection and in the Information system. Each technical or operational deficiency found should be recorded individually. Where there is any doubt as to the flag State requirements, the PSCO should contact the flag State in order to clarify them.

4.2 Database input:

In case of deficiencies, and especially in the case of detainable deficiencies, it is highly recommended to upload in THETIS any complementary documentation such as drawings, pictures or copies of certificates that may back up the findings recorded in the inspection report. Additionally, free text information may be added to a deficiency in case of issues for verification upon release of detention or at next port.

ANNEX

Annex 1

IGF CERTIFICATION
Ref IMO Resolution MSC.392(95)
APPENDIX

CERTIFICATES

FORM OF SAFETY CERTIFICATE FOR PASSENGER SHIPS

PASSENGER SHIP SAFETY CERTIFICATE

10 The following new paragraph 2.2 is added after the existing paragraph 2.1:

"2.2 : the ship complied with part G of chapter II-1 of the Convention using as fuel/N.A.1"

11 The existing paragraphs 2.2 to 2.11 are renumbered accordingly.

FORM OF SAFETY CONSTRUCTION CERTIFICATE FOR CARGO SHIPS

CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE

12 The existing paragraph 2 is replaced with the following:

"2. That the survey showed that: .1 the condition of the structure, machinery and equipment as defined in the above regulation was satisfactory and the ship complied with the relevant requirements of chapters II-1 and II-2 of the Convention (other than those relating to fire safety systems and appliances and fire control plans); and .2 the ship complied with part G of chapter II-1 of the Convention using as fuel/N.A4"

Annex 2

Regulation V/3 (Added by Res.MSC.396(95))

Mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on ships subject to the IGF Code

1. This regulation applies to masters, officers and ratings and other personnel serving on board ships subject to the IGF Code.
2. Prior to being assigned shipboard duties on board ships subject to the IGF Code, seafarers shall have completed the training required by paragraphs 4 to 9 below in accordance with their capacity, duties and responsibilities.
3. All seafarers serving on board ships subject to the IGF Code shall, prior to being assigned shipboard duties, receive appropriate ship and equipment specific familiarization as specified in regulation I/14, paragraph 1.5.
4. Seafarers responsible for designated safety duties associated with the care, use or in emergency response to the fuel on board ships subject to the IGF Code shall hold a certificate in basic training for service on ships subject to the IGF Code.
5. Every candidate for a certificate in basic training for service on ships subject to the IGF Code shall have completed basic training in accordance with provisions of section A-V/3, paragraph 1 of the STCW Code.
6. Seafarers responsible for designated safety duties associated with the care, use or in emergency response to the fuel on board ships subject to the IGF Code who have been qualified and certified according to regulation V/1-2, paragraphs 2 and 5, or regulation V/1-2, paragraphs 4 and 5 on liquefied gas tankers, are to be considered as having met the requirements specified in section A-V/3, paragraph 1 for basic training for service on ships subject to the IGF Code.
7. Masters, engineer officers and all personnel with immediate responsibility for the care and use of fuels and fuel systems on ships subject to the IGF Code shall hold a certificate in advanced training for service on ships subject to the IGF Code.
8. Every candidate for a certificate in advanced training for service on ships subject to the IGF Code shall, while holding the Certificate of Proficiency described in paragraph 4, have:
 - .1 completed approved advanced training for service on ships subject to the IGF Code and meet the standard of competence as specified in section A-V/3, paragraph 2 of the STCW Code; and
 - .2 completed at least one month of approved seagoing service that includes a minimum of three bunkering operations on board ships subject to the IGF Code. Two of the three bunkering operations may be replaced by approved simulator training on bunkering operations as part of the training in paragraph 8.1 above.
9. Masters, engineer officers and any person with immediate responsibility for the care and use of fuels on ships subject to the IGF Code who have been qualified and certified according to the standards of competence specified in section A-V/1-2, paragraph 2 for service on liquefied gas tankers are to be considered as having met the requirements specified in section A-V/3, paragraph 2 for advanced training for ships subject to the IGF Code, provided they have also:
 - .1 met the requirements of paragraph 6; and
 - .2 met the bunkering requirements of paragraph 8.2 or have participated in conducting three cargo operations on board the liquefied gas tanker; and
 - .3 have completed sea going service of three months in the previous five years on board:
 - .1 ships subject to the IGF Code;
 - .2 tankers carrying as cargo, fuels covered by the IGF Code; or
 - .3 ships using gases or low flashpoint fuel as fuel.
10. Every Party shall compare the standards of competence which it required of persons serving on gas-fuelled ships before 1 January 2017 with the standards of competence in Section A-V/3 of the STCW Code, and shall determine the need, if any, for requiring these personnel to update their qualifications.

11. Administrations shall ensure that a Certificate of Proficiency is issued to seafarers, who are qualified in accordance with paragraphs 4 or 7, as appropriate.
12. Seafarers holding Certificates of Proficiency in accordance with paragraph 4 or 7 above shall, at intervals not exceeding five years, undertake appropriate refresher training or be required to provide evidence of having achieved the required standard of competence within the previous five years.

Annex 3

**LNG-BUNKER DELIVERY NOTE*
LNG AS FUEL FOR**

SHIP NAME: _____ **IMO NO.:** _____

Date of delivery:

1. LNG-Properties

Methane number **	--	
Lower calorific (heating) value	MJ/kg	
Higher calorific (heating) value	MJ/kg	
Wobbe Indices Ws / Wi	MJ/m ³	
Density	kg/m ³	
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, CH ₄	% (kg/kg)	
Ethane, C ₂ H ₆	% (kg/kg)	
Propane, C ₃ H ₈	% (kg/kg)	
Isobutane, i C ₄ H ₁₀	% (kg/kg)	
N-Butane, n C ₄ H ₁₀	% (kg/kg)	
Pentane, C ₅ H ₁₂	% (kg/kg)	
Hexane; C ₆ H ₁₄	% (kg/kg)	
Heptane; C ₇ H ₁₆	% (kg/kg)	
Nitrogen, N ₂	% (kg/kg)	
Sulphur, S	% (kg/kg)	
negligible<5ppm hydrogen sulphide, hydrogen, ammonia, chlorine, fluorine, water		

3. Net Total delivered: _____ t, _____ MJ _____ m³

Net Liquid delivery: _____ GJ

4. Signature(s):

Supplier Company Name, contact details: _____

4. Signature(s):

Supplier Company Name, contact details: _____

Signature: _____ Place/Port _____ date: _____

Receiver: _____

*) These PSC Guidelines on IGF Code have been adopted by the Port State Control Committee at its 55th session