

**RULES  
FOR THE CLASSIFICATION OF  
SHIPS**

*Part 33 – SHIPS USING GASES OR OTHER  
LOW-FLASHING FUEL*

*January 2025*

*Amendments No. 1*

**July 2025**

**CROATIAN REGISTER OF SHIPPING**

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By the decision of the General Committee of Croatian Register of Shipping,

Amendments No. 1 to the  
**RULES FOR THE CLASSIFICATION OF SHIPS**  
Part 33 – SHIPS USING GASES OR OTHER LOW-FLASHING FUEL

have been adopted on 27th June 2025 and shall enter into force on 1st July 2025

## GENERAL TERMS AND CONDITIONS

(March 2022)

### Article 1 GENERAL

**1.1** CROATIAN REGISTER OF SHIPPING (hereinafter: the *Register*) shall at all times remain an independent contractor and neither the *Register* nor any of its officers, surveyors, auditors, inspectors, agents, appointers, officers or managers shall act as an employee, servant or agent of any other party in the performance of the Services rendered by the *Register*.

**1.2** The *Register* acts as a service provider. The Services provided by the *Register* cannot be construed as a commitment by the *Register* to achieve any result or as a warranty.

**1.3** The provision of Services is subject to these General Terms and Conditions. No other terms and conditions shall apply, either expressly or by implication, unless expressly agreed in writing between the Parties.

**1.4** These General Terms and Conditions shall be incorporated into, or referred to in any Contract and shall prevail over and exclude any other terms and conditions that the Client may wish to impose.

Any amendments to and/or deviations from these General Terms and Conditions, as well as any additional terms and conditions of the Client, shall be binding or valid only if set forth in writing and duly signed by the authorised representatives of both Parties.

**1.5** The invalidity of one or more provisions of these General Terms and Conditions shall not affect the remaining provisions.

**1.6** The Client acknowledges that the latest version of these General terms and Conditions and the latest version of applicable Rules apply to the Services provided by the *Register*.

**1.7** Definitions in these General Terms and Conditions take precedence over other definitions that may appear in other documents issued by the *Register*.

**1.8** The Client should at all times be aware of the provisions of these General Terms and Conditions, as they may be further amended, with their latest up to date version available on the web site of the *Register*.

### Article 2 DEFINITIONS

**2.1** **Certificate** means either a class certificate or statutory certificate, statement, attestation, statement of compliance, and a report following the Services provided by the *Register*.

**2.2** **Certification** means the activity of certification in application of international and national standards and international industry practice provided by the *Register*.

Certification is an appraisal given by the *Register* to the Client and cannot be construed as an implied or express warranty of safety, fitness for purpose, seaworthiness of the vessel or its value for sale, insurance or chartering.

The purpose of Certification is to provide classification and statutory services and assistance to the maritime industry, Flag State Administrations, and regulatory authorities relating to maritime safety and pollution prevention.

**2.3** **Classification** includes all activities and Services provided by the *Register* in accordance with the Rules. Classification may or may not be accompanied by the issuance of a Certificate of class with reference to the Rules.

Certificate of class is valid only if issued by the *Register*.

However, Certificate of class should not be construed as a guarantee of the safety, fitness for purpose or seaworthiness of the vessel. It is merely an attestation that the vessel complies with the Rules developed and published by the *Register*.

In addition, the *Register* is not a guarantee of the safety of life or property at sea or the seaworthiness of a vessel because, although the classification of a vessel is based on the assumption that the vessel will be properly loaded, operated, and maintained by competent and qualified personnel, the *Register* has no control over how a vessel is operated and maintained between the periodic surveys it conducts.

**2.4** **Statutory certification** means certification made by the *Register* on behalf of the Flag State Administrations when and to the extent that the *Register* has been authorised to do so by the respective Flag State.

Statutory certification and services include the assessment of vessels registered by the Flag State and/or ship management companies to determine whether such ships/companies comply with the applicable requirements of international conventions, codes and national legislation, and the issuance of, or assistance in the issuance of, the appropriate certificates and documents.

Statutory certification includes, but is not limited to, certification, survey, and issuance of statutory certificates on behalf of the Flag State.

In cases where the *Register* acts on behalf of Flag State Administrations, the *Register* shall follow guidance issued by IMO (Resolutions, Circulars, etc.) or by IACS through Unified Interpretations (UI), unless otherwise directed by the Flag State.

**2.5** **Client** means the shipowner, company, shipyard and/or party requesting Services or taking ownership of a classed vessel. In cases where shipowners have authorized another party to operate the vessel on their behalf, that party shall be considered as the company.

In addition to the above the Client means the person and/or entity that has requested Services from the *Register* and that has entered into a Contract or an agreement for Services with the *Register*.

**2.6** **Parties** means the *Register* and Client together.

**2.7** **Party** means the *Register* or the Client.

**2.8** **Contract** means the contract in the form of a written agreement between the Client and the *Register* requesting Services, including these General Terms and Conditions and the Rules.

The provisions related to the Contract in these General Terms and Conditions shall apply even if there is no written agreement between the Client and the *Register*.

The Client may request the *Register* in writing to make a change to the contracted Services. However, the *Register* shall not be obligated to accept or execute any such change until a written agreement has been signed with the Client regarding the compensation and the possible impact of the change on the schedule as an addendum to the originally contracted Services.

**2.9** **Services** shall mean the services specified in 2.2, 2.3 and 2.4, but also other services related to certification, classification and statutory certification, such as, but not limited to: ISM Code certification, ISPS Code, MLC 2006 certification, fuel oil consumption reporting, IHM certification, approval of manufacturers and service providers, certification of materials and products, training activities, conformity assessment, and any other relevant activities such as third party inspections, testing, shore and shipboard trials.

The Services provided by the *Register* are performed on a random basis and in no case include a full inspection of all items.

The *Register* shall provide the Services in accordance with related Contract(s), the provisions of these General Terms and Conditions, Rules, the international and national standards, the international conventions, the EU Regulations, the Flag State requirements and the industry practices applicable to the particular Service and always assuming that the Client is aware of these standards and the industry practices.

When providing Services, the *Register* does not guarantee the accuracy of the information or advice provided.

In providing Services, the *Register* does not assess compliance with standards other than the Rules, international and national standards, international conventions, EU regulations, Flag State requirements and industry practice, to the extent agreed in writing or specified in the Contract.

**2.10** The *Register* means the Croatian Register of Shipping, an entity organized and existing under Croatian law, which, according to the Law on the Croatian Register of Shipping (Official Gazette No. 1996/81, 2013/76 and 2020/62) and the Charter of the *Register*, is an independent, not-for-profit, but public welfare oriented, public foundation that performs tasks:

- classification of sea-going ships,
- statutory certification of sea-going ships on behalf of the Flag State Administrations,
- classification of inland navigation vessels,
- statutory certification of inland navigation vessels,
- statutory certification of recreational crafts,
- certification of materials and products,
- conformity assessment of recreational crafts,
- conformity assessment of marine equipment,
- conformity assessment of pressure vessels,
- certification/registration of quality management systems.

**2.11** **Vessel** means a ship, vessel, unit or offshore structure of any kind, whether or not connected to the shore or sea/river bed, located at sea or in inland waters and intended for transportation or special operations on the water, as decided by the *Register*.

**2.12** **Rules** means the Rules for the classification, guidelines, instructions, or other documented evidence of the *Register* related to the Services provided.

The competent interpretation of the requirements specified in the Rules or other regulations published by the *Register* shall be the exclusive responsibility of the *Register's* Head Office, notwithstanding any possible different interpretations by other parties.

In cases where the Rules do not contain detailed requirements, the specific approval by the *Register* shall be based on the principles of the Rules and shall ensure a safety standard equivalent to that of the Rules.

### Article 3 RESPONSIBILITIES

**3.1** It is the Client's responsibility to ensure that all surveys required for vessel's class maintenance are conducted in a timely manner and in accordance with the Rules.

**3.2** The *Register* may suspend or withdraw the vessel's existing Certificate of class in the event of serious deficiencies and replace it with a new Certificate of class with a shortened period of validity during which the deficiencies are to be rectified.

In addition, the *Register* shall suspend or withdraw a vessel's Certificate of class if the deficiencies are of such a magnitude as to endanger the class of the vessel, its safety and integrity, the safety of the crew, passengers, or the marine environment, and shall require that the vessel is to be inspected at the first port of call where the necessary repairs are to be carried out.

**3.3** The Client should inform the *Register*:

- (i) in the event of a change in the intended use of a vessel, a conversion and alteration of the hull, machinery installations and other equipment affecting the Class of the vessel assigned by the *Register*. Conversions and alterations must be made under the supervision of the *Register* and must comply with the requirements of the Rules and/or additional requirements of the *Register*,
- (ii) in cases where the vessel has been damaged to such an extent that the Class of the vessel is likely to be affected and the safety and integrity of the vessel is likely to be compromised. In such cases, the vessel must be surveyed at the first port of call or as further directed by the *Register*. The survey shall be to the extent deemed necessary by the *Register*, by taking into account the extent of the damage.
- (iii) in cases where class-related deficiencies and/or defects are found as a result of a Flag State inspection or Port State Control. Should the Client fail to notify the *Register* of the detention of the vessel by Port State Authorities due to class related deficiencies, the *Register* reserves the right to suspend or withdraw the Certificate of class.

**3.4** The *Register* shall have full control over Certificates issued and may suspend or withdraw a Certificate at any time in its sole discretion if the Client fails to comply with the following requirements set forth in the *Rules for the Classification of Ships, Part 1 - General Requirements, Chapter 1 - General Information*, as applicable:

- (i) para. 5.3 - *Maintenance of the validity of Certificate of Class*,
- (ii) para. 5.4 - *Period of Validity*,
- (iii) para. 5.5 - *Extension of the Period of Validity*,
- (iv) para. 5.6 - *Suspension and Reinstatement of Class in the Case of Overdue Surveys*, and
- (v) para. 5.7 - *Withdrawal of Class*.

**3.5** The *Register* may suspend or withdraw a Certificate at any time in its sole discretion if the Client fails to comply with the following requirements set forth in the *Rules for the Classification of Inland Navigation Vessels, Part 1 - Classification and Surveys, Chapter 1 - Principles of Classification*, as applicable:

- (i) para. 2.8 - *Maintenance of the Validity of the Certificate of Class*,
- (ii) para. 2.9 - *Extension of validity of the Certificate of Class*, and following requirements set forth in the *Rules for the Classification of Inland Navigation Vessels, Part 1 - Classification and Surveys, Chapter II - Classification*, as applicable:
- (iii) para. 2.1 - *Suspension of Class*,
- (iv) para. 2.2 - *Withdrawal of Class*.

**3.6** In addition to clauses 3.2, 3.4 and 3.5 of this Article, the *Register* reserves the right to terminate the Services and related Contract in the event of a breach of the provisions of these General Terms and Conditions.

**3.7** If the Client fails to provide the *Register* with the required access or information at the agreed times or fails to prepare for the Service in a timely manner, the *Register* may suspend the provision of the Service until it receives the Client's instructions for access and/or the required information.

The *Register* shall not be liable for the consequences of such suspension, and the Client shall be responsible for the *Register's* additional fees and other unnecessary costs and expenses incurred by the *Register*.

**3.8** The Client is obliged to perform timely payments of the invoices for provided Services. However, the *Register* may retain or withhold any Service or Certificate to the Client in the case of outstanding payments, whether mutually related or not, arising out of the entire business relationship with the Client.

#### Article 4

##### HEALTH, SAFETY AND ENVIRONMENT

**4.1** Both the *Register* and the Client shall apply reasonable standards to promote safety, health, and environmental protection and to provide a safe working environment for their personnel.

**4.2** The Client shall provide the *Register* with all access and information necessary for the safe and efficient performance of the requested Services as required by the Rules.

**4.3** During the survey, personnel of the *Register* should have secure access to all work that directly or indirectly affects the Service.

**4.4** The *Register* has the right to refuse to conduct an activity or visit an area or site if the *Register* in its sole discretion, believes that relevant risks are unacceptable or are not adequately addressed, contained, or otherwise mitigated.

Such a decision shall suspend the obligations of both Parties under the Contract without incurring any liability or penalty until the Parties agree on how to proceed.

#### Article 5

##### THIRD PARTIES AND SUBCONTRACTORS

**5.1** Each specific Contract, including any Certificates issued, relates specifically to the Client, and no rights, obligations, interests, claims, benefits or Certificates issued shall extend to any third party without the prior written consent of the *Register*.

**5.2** The Client shall not be entitled to grant any right to use the Certificates to any third party without the prior written consent of the *Register*.

**5.3** The Client shall not without *Register's* consent, cede, assign, transfer, subcontract or deal in any manner with all or any of its rights or obligations under any Service and related Contract.

**5.4** With regard to third party rights to access information and Certificates under confidentiality clause reference is to be made to Article 9.

#### Article 6

##### TAXES

**6.1** Each Party shall be responsible for and shall bear all taxes, duties or similar governmental charges levied or imposed on any activity of that Party.

**6.2** Prices, fees, rates, or remuneration are exclusive of any form of sales tax, value added tax, administrative fees and services tax and/or other similar taxes, including any surcharges. If any such indirect tax is or becomes applicable to the Services provided under the Contract, the Client shall be responsible for the payment of such indirect taxes.

#### Article 7

##### PAYMENT OF INVOICES

**7.1** The provision of Services by the *Register*, whether complete or not, shall include payment of fees thirty (30) days after issuance of the invoice for the portion of the Services performed.

**7.2** In the event that the Client fails to meet the requirements for payment in accordance with the instalments and terms of payment contained herein, the *Register* reserves the right to charge the Client with the interest rate in accordance with the applicable laws of the Republic of Croatia.

**7.3** If the Client disputes an invoice or part of an invoice, the Client shall notify *Register* thereof in writing without undue delay. If no notification is received by the due date, Client shall be deemed to have accepted the invoice in full. If only part of an invoice is disputed, the undisputed amount must be paid by the due date.

Consequently, no disputes arising between the *Register* and the Client shall interfere with prompt payment of invoices by the Client. Any rights of lien or retention in favour of the Client or otherwise, are hereby excluded.

**7.4** In the event of cancellation of all or part of the Services prior to their final completion, the Client shall pay all costs incurred by the *Register* on pro-rata basis for the portion of the Services provided to date. In such event, the *Register* will not claim the Client for loss of profit or reduced income. All reasonable costs directly attributable to the early termination and all amounts due to the *Register* at that time shall become immediately due and payable.

**7.5** In the event of termination of the Service and related Contract, the *Register* shall be entitled to retain any payments, deposits or prepayments of fees made by the Client prior to the date of termination up to the amount to which the *Register* is entitled.

#### Article 8

##### TERMINATION

**8.1** The Parties shall have the right to terminate the Services and the related Contract(s) by written notice to the other Party, and without prejudice to Article 7, in the following cases:

- (i) if the other Party commits a material breach of these General Terms and Conditions and/or the Contract and fails to rectify such breach in accordance with clause 8.4 of this Article,
- (ii) if the other Party becomes insolvent, is unable to pay its debts as they become due, or becomes subject to bankruptcy proceedings, administration, receivership, dissolution, liquidation, winding up or otherwise ceases to carry on its business; or
- (iii) for convenience, after giving the other Party thirty (30) days' prior written notice of termination.

**8.2** The Classification issued for the relevant vessel and the Certificates previously issued shall remain valid until the effective date of termination or, in the event of such termination, immediately, subject to compliance with Article 3 and Article 7.

**8.3** If, in the reasonable opinion of the *Register*, the Client breaches or is suspected of breaching Article 14 or Article 15, the *Register* shall have the right to terminate the Service and related Contract with immediate effect.

**8.4** Notwithstanding the provisions of clause 8.1 of this Article, the Party intending to terminate Services for non-compliance or breach of the provisions of these General Terms and Conditions shall notify the other Party of the non-compliance or violation of the provisions of these General Terms and Conditions and set a reasonable deadline of 15 (fifteen) days for the other Party to remedy the breaches of the provisions of these General Terms and Conditions.

If the Party fails to remedy the breaches of the provisions of these General Terms and Conditions within the aforementioned period, the other Party shall have the right to terminate Services without further notice.

**8.5** Termination of the Service and related Contract pursuant to the provisions of these General Terms and Conditions shall not give either Party the right to claim any additional compensation, indemnity or reimbursement from the other Party as a result of such termination, but such termination shall not affect any rights or remedies available to a Party at the time the termination becomes effective or any obligations or liabilities incurred by a Party.

#### Article 9 CONFIDENTIALITY

**9.1** The Parties agree to keep confidential all facts, data, information, etc. related to the other Party's business that they have learned in the course of providing Services. Such information and data shall not be disclosed by the Parties to any third party and shall not be used or misused to the detriment of the other Party.

**9.2** The *Register* will keep confidential any data, plans or other technical information received from the Client and will not disclose it to any third party outside the *Register*, unless authorised by the Client. This obligation shall continue to apply after termination of the Services. This obligation shall not apply to any data, plans or other technical information that was in the possession of the *Register* prior to being disclosed to the *Register* by or on behalf of the Client, or that becomes publicly available through no fault of the *Register*, or is otherwise provided to the *Register* by an independent source that is under no obligation of confidentiality to the *Register*.

**9.3** Certificates issued by the *Register* to the Client as a result of the Services provided shall not be covered by the confidentiality Article.

Notwithstanding the foregoing, the Client shall be entitled to disclose any data to its affiliates involved in the transactions related to the Services or the Client's core activities.

**9.4** Notwithstanding clause 9.1 and clause 9.2 of this Article, the *Register* shall have the right to disclose the Confidential Information to the following parties if required by regulations of:

- (i) authorised representatives of the Flag State Administration,
- (ii) authorised audit teams (i.e., accreditation body or EC auditors),
- (iii) the International Association of Classification Societies (IACS),
- (iv) a court of competent jurisdiction, government agency, or other relevant public authority, in accordance with applicable law, court order, or other public regulation.

**9.5** The Client acknowledges that the *Register* is required to provide access to information to the EU Commission or any person acting on its behalf in accordance with applicable EU requirements and that the Client shall give the EU Commission with unrestricted access to the vessels for the purpose of inspection.

**9.6** The obligations in this Article shall survive the conclusion of the Service or the termination of related Contract and shall continue for as long as the relevant information remains confidential.

#### Article 10 INTELLECTUAL PROPERTY

**10.1** Each Party shall be the sole owner of all rights to its Intellectual Property created before or after the effective date of these General Terms and Conditions, whether or not associated with any Contract between the Parties.

**10.2** The Intellectual Property developed by the *Register* for the provision of the Services, including but not limited to drawings, calculations and reports, shall remain the exclusive property of the *Register*.

#### Article 11 PROFESSIONAL ETHICS

**11.1** Each of the Parties warrants that, with respect to the matters contemplated herein, neither it nor its affiliates has made or will make, directly or indirectly, any offer, payment, gift or authorization of money to any government official or employee, political party, public official or candidate for the benefit or advantage thereof.

**11.2** In providing the Services, the *Register* shall strictly adhere to the requirements of its Code of Ethics relating to business activities.

#### Article 12 FORCE MAJEURE

**12.1** For the purposes of these General Terms and Conditions, the term "Force Majeure" includes any event that directly or indirectly prevents the Parties from fulfilling their obligations due to events beyond their control, such as: strikes, wars, riots, piracy, civil commotion, malicious damage, pandemic, compliance with laws or government orders, rules, regulations or directives, sanctions and embargoes, accidents, defects of plants or machinery, seizures, fires, floods, storms and the like.

**12.2** If either Party is prevented or delayed from performing its obligations by Force Majeure, such Party shall promptly notify the other Party in writing of the circumstances of the Force Majeure and its influence and, after such notification, shall not be liable for performance of any obligations prevented by the influence of the Force Majeure during its duration. Upon termination of the influence of the Force Majeure, the same Party should proceed with the planned activities in order to fulfil its obligations.

**12.3** If one of the Parties is prevented by Force Majeure in its activities and fulfilment of its obligations and this event lasts continuously for three (3) months, the other Party shall be entitled to terminate the Service and related Contract without liability.

**12.4** Neither of the Parties shall be liable for non-compliance with these General Terms and Conditions due to Force Majeure. If one of the Parties is prevented from fulfilling its obligations under these General Terms and Conditions due to Force Majeure, it shall immediately notify the other Party in writing within a reasonable period of time, stating the reasons for the Force Majeure and providing relevant evidence, if any.

#### Article 13 INDEMNIFICATIONS

**13.1** Each Party shall indemnify the other Party against all claims arising out of the performance of the Services in respect of bodily injury, illness or death of any of its employees or other representatives and in respect of loss of or damage to the Party's property.

This provision shall apply whether or not the damage is caused or contributed to by the negligence of the other Party. Both Parties are obliged to take out separate insurances for these liabilities.

**13.2** The Client shall indemnify the *Register* from and against all claims arising from the Client's violation of the provisions of these General Terms and Conditions and from the misuse of the Certificates issued by the *Register*.

**13.3** The Client shall indemnify the *Register* against any financial responsibility or amounts arising from non-payment, late payment or payment of withholding taxes to the non-relevant tax authority or any other relevant governmental body.

**13.4** Each Party shall notify the other Party without undue delay as soon as it becomes aware of any incident that could give rise to a claim against the other Party in respect of the Service provided and related Contract.

#### Article 14 ANTI-CORRUPTION

**14.1** Each Party agrees that in performing its obligations under any Service, it will ensure that its affiliates, employees and/or agents, subsidiaries, subcontractors, consultants, and any other persons providing Services will:

- (i) comply with all applicable anti-bribery and anti-corruption laws (collectively, Anti-Bribery Laws) and, in particular, do not, directly or indirectly, offer, promise, grant, authorise the payment of, or confer any financial or other benefit on any public or government official:
  - to a public or governmental official to obtain or retain business with the intent to influence such official in his or her capacity as an official, if such official is not permitted or required by written law to be influenced by the offer, promise or gift; or
  - to another person with the intent to induce or reward the improper performance of a function or activity or for any other illegal purpose,
- (ii) maintain adequate systems and procedures designed to prevent activities, practises, or conduct in connection with services that would constitute an offence under an anticorruption law; and
- (iii) take reasonable steps to prevent similar acts by customers, contractors, subcontractors, agents and other third parties, persons under its control or influence.

**14.2** Any failure by a Party to comply with or ensure compliance with its obligations under this Article shall, notwithstanding anything to the contrary in these General Terms and Conditions, be deemed a breach of these General Terms and Conditions which shall entitle the other Party to suspend and/or terminate the Services by notice in writing with immediate effect without further liability to the other Party except for any liability which may have arisen prior to the date of termination or suspension (as the case may be).

**14.3** If a Party elects to suspend the provision of Services under these General Terms and Conditions pursuant to this Article, it shall have the sole and absolute discretion to determine:

- (i) when it will resume performance (if at all); and
- (ii) extend the period for performance of its obligations under the Services in its sole discretion.

#### Article 15 SANCTIONS

**15.1** Each Party shall conduct all activities in compliance with all laws, statutes, rules, economic and trade sanctions (including, but not limited to, U.S. sanctions and EU sanctions) and regulations applicable to such Party, including, but not limited to: child labour, forced labour, collective bargaining, discrimination, abuse, working hours and minimum wages, anti-bribery, anti-corruption, copyright and trademark protection, personal data protection.

**15.2** Each Party hereby represents and warrants that it is not or will not be subject to any economic or trade sanctions ("Sanctions") imposed by the United States of America, the European Union, the United Kingdom, any EU Member State, or the United Nations with respect to any country and/or by any sanction giver with respect to any company/individual.

**15.3** Each Party represents and warrants that it will strictly comply with all Sanctions.

**15.4** Nothing in these General Terms and Conditions shall be construed as causing or obligating either Party to act or refrain from acting in a manner inconsistent with, punishable by, or prohibited by any Sanctions.

**15.5** Neither Party shall be obligated to perform any obligation arising under these Terms and Conditions (including, without limitation, the obligation to):

- (i) perform, deliver, accept, sell, purchase, pay or receive any funds to, from or through any person or entity; or
- (ii) engage in any other action whatsoever,  
if doing so violates or is inconsistent with sanctions and/or recommendations of international (intergovernmental) organisations to combat the financing of terrorism and other criminal activities and/or money laundering or exposes such Party to investigation or penalties.

**15.6** In the event that a Party breaches any Sanctions or the Party's Business and/or Transactions arising out of or in connection with these General Terms and Conditions breach any Sanctions or otherwise violate the recommendations of one or more international (intergovernmental) organisations for combating the financing of terrorism and other criminal activities and/or money laundering, the other Party shall be entitled to terminate these General Terms and Conditions by written notice with immediate effect without incurring any liability to the other Party, except for liabilities (if any) incurred prior to the date of termination.

#### Article 16 LIABILITY

**16.1** The *Register* is not, and cannot be considered as, an underwriter, consulting engineer, naval architect, shipbuilder, shipowner, or ship management company, nor can it assume the obligations and responsibilities associated with such functions, although the *Register's* experience may enable it to respond to inquiries about matters not covered by its Rules, policies, instructions, or other documented evidence.

**16.2** The practices and procedures of the *Register* shall be selected by the *Register* in its sole and absolute discretion based on its experience and knowledge and in accordance with generally accepted professional standards in the relevant field of classification societies.

**16.3** Nothing herein contained shall release any designer, naval architect or engineer, shipbuilder or manufacturer, shipyard, vendor, supplier, contractor or subcontractor, repairer or owner, from any information, report, certificate or similar document issued in connection with the provision of Services by the *Register*, operator, manager or other person or entity from any express or implied warranty or other contractual obligation or responsibility, or from any negligent act, error or omission of any kind whatsoever, nor shall they create any right, claim or benefit for any third party.

**16.4** The *Register* shall exercise due care in the selection or appointment of its surveyors and all other employees whose presence and work is necessary for the provision of the Services.

**16.5** If any person or entity using the Services of the *Register* suffers any loss, damage or expense that is or is shown to have been caused by a negligent act, omission or error of the *Register's* officers, surveyors, auditors, inspectors, agents, appointees, officers or managers, or those purporting to act in the name of and on behalf of the *Register*, or a negligent inaccuracy, advice, report or evidence given by or in the name of or/and on behalf of the *Register*, then the liability of the *Register* is limited in respect of any direct or indirect claim shall be limited to an amount not exceeding five times the fee charged or to be charged by the *Register* for the relevant Service.

**16.6** Any liability for consequential damages is expressly excluded.

For purposes of this clause, consequential damages include, without limitation:

- (i) indirect or consequential damages,

- (ii) loss and/or delay of production, loss of products, loss of use, loss of bargain, loss of revenue, loss of profit or anticipated profit, loss of business and business interruption, in each case directly or indirectly.

**16.7** The Parties are not entitled to assign the performance of obligations under these General Terms and Conditions or parts thereof to third parties without the prior written consent of the other Party.

**16.8** If during the term of the Contract, there is a transfer of function due to change of status (merger, acquisition, division, etc.), all obligations and rights under these General Terms and Conditions and associated Contract will be transferred to the legal successor of the Party concerned.

#### Article 17 GOVERNING LAW AND RESOLVING OF DISPUTES

**17.1** These General Terms and Conditions and any dispute or claim between the Parties arising from or in connection with it, or the Services provided hereunder, will be governed and interpreted in accordance with the English law.

**17.2** The Parties shall use their reasonable efforts to resolve any claim or dispute arising in relation to rendered Service by negotiations within a reasonable time.

**17.3** Should the Parties fail to resolve any claim or dispute by negotiations, the dispute shall be exclusively subject to the jurisdiction of the Permanent Arbitration Court with the Croatian Chamber of Economy in Zagreb, Republic of Croatia.

**17.4** The Parties agree to keep the any arbitration proceedings confidential.

**17.5** Notwithstanding the above, any claim not presented within three (3) months of the completion of the particular Services, or within three (3) months of from the date when the events which are relied on were first discovered by the Client, shall be deemed waived and absolutely time barred.

**17.6** Any objections against the line adopted by any of the *Register's* servants in fulfilling their duties or against the conclusions reached are to be raised to the *Register* by the Party as soon as possible.

If the Party is not satisfied with the final conclusions and interpretations by the *Register* the arbitration lays upon the Commission for appeal for Classification and Statutory certification of ships, which is to be formed according to the Regulation 39 of the Charter of the *Register*.

## **INTRODUCTORY NOTES**

These amendments shall be read together with the requirements in the Rules for the classification of ships, Part 33 – Ships using gases or other low-flashing fuel, edition January 2025.

Table 1 contains review of amendments, where items changed or added in relating to previous edition are given, with short description of each modification or addition. All major changes throughout the text are shaded.

This Part of the Rules includes the requirements of the following international Organisations:

**International Maritime Organization (IMO)**

**Conventions:** International Convention for the Safety of Life at Sea, 1974 (SOLAS 74) and all subsequent and applicable amendments adopted up to MSC 106  
Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS PROT 1988)

**Codes:** International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code) as adopted by MSC.391(95), as amended by MSC.422(98), MSC.458(101) and MSC.475(102)

**Circulars:** MSC.1/Circ.1394 (Rev.2, July 2019), MSC.1/Circ.1599 (Rev.3, July 2024), MSC.1/Circ.1647, MSC.1/Circ.1621, MSC.1/Circ.1622 (Rev.1, July 2024), MSC.1/Circ.1666, MSC.1/Circ.1667, MSC.1/Circ.1670

**International Association of Classification Societies (IACS)**

**Unified Requirements (UR):**

M78 (Rev.2, Jan 2024), M82 (Mar 2023), W1 (Rev.4, Apr 2021), Z25 (Rev.1 Sep.2017)

**Unified Interpretations:**

GF1 (Jan 2017), GF2 (Sep 2017) GF3 (Dec 2017), GF4 (Dec 2017), GF5 (Dec 2017), GF6 (Dec 2017), GF7 (Dec 2017), GF8 (Dec 2017), GF9 (Dec 2017), GF10 (Dec 2017), GF11 (Dec 2017), GF12 (Dec 2017), GF13 (Rev.1, May 2023), GFGF14 (July 2018), GF15 (July 2018), GF16 (Nov 2018), GF17 (Dec 2018), GF18 (Feb 2019), GF19 (Dec 2023), GF20 (Jun 2024)

**Recommendations (Rec.):**

No.142 (June 2016), No.146 (Aug 2016), No.148 (Rev.1 Mar 2020)

## TABLE 1 – REVIEW OF AMENDMENTS

This review comprises amendments in relation to the Rules for the classification of ships, Part 33 – Ships using gases or other low-flashing fuel, edition January 2025.

<i>ITEM</i>	<i>DESCRIPTION OF THE AMENDMENTS</i>
<b>Section 1 – PREMISE OF THE RULES</b>	
Head 1.2 - PREAMBLE	Item 1.2.5 has been amended as a consequence of introducing Liquid Petrol Gas (LPG) as fuel in accordance with the requirements of IMO Circular MSC.1/Circ.1666 - <i>Interim guidelines for the safety of ships using LPG fuels.</i>
<b>PART A, Section 2 - GENERAL</b>	
Head 2.1 – APPLICATION	New item 2.1.3 is added after item 2.1.2 as a consequence of introducing the requirements of IMO Circular MSC.1/Circ.1666 - <i>Interim guidelines for the safety of ships using LPG fuels.</i>
Head C2.1 – APPLICATION,	Text has been amended as a consequence of introducing LPG fuels in accordance with the requirements of IMO Circular MSC.1/Circ. 1666 - <i>Interim guidelines for the safety of ships using LPG fuels.</i>
Head 2.2 – DEFINITIONS	Item C2.2.10 has been amended as a consequence of introducing LPG fuels in accordance with the requirements of IMO Circular MSC.1/Circ. 1666 - <i>Interim guidelines for the safety of ships using LPG fuels.</i>
<b>PART A-1, Section 5 – SHIP DESIGN AND ARRANGEMENT</b>	
Head 5.8 - PROVISIONS FOR FUEL PREPARATION SPACES DESIGN	New item C5.8.5 is added after item C5.8.4 to provide clarification on applying certain tank connection space requirements to the design of a fuel preparation room not located on an open deck, because of implementation of IMO Circular MSC.1/Circ.1667 - <i>Unified interpretation of the IGF code.</i>
Head 9.2 - FUNCTIONAL REQUIREMENTS	Head 9.2 has been already amended in Rule's edition July 2024 because of implementation of UI GF19 - Fuel Supply to Consumers – single common flanges. No changes needed per MSC.1/Circ.1670 - <i>Unified interpretation of the IGF code.</i>
<b>APPENDIX 1 - INTERIM GUIDELINES FOR THE SAFETY OF SHIPS USING METHYL/ETHYL ALCOHOL AS FUEL (MSC.1/CIRC.1621), Section 5 - Ship design and arrangement</b>	
Head 5.3 - General provisions	Notes 1 to 3 are added for items 5.3.1, 5.3.2, 5.3.6 and note 4 at the end of head, because of implementation of UI GF20 - <i>Arrangements of fuel tanks in methyl/ethyl alcohol fuelled vessels.</i>
<b>New APPENDIX 2</b>	
APPENDIX 2 - INTERIM GUIDELINES FOR THE SAFETY OF SHIPS USING LPG FUELS (MSC.1/Circ.1666)	New APPENDIX 2 added after text of APPENDIX 21 as a consequence of introducing the requirements of IMO Circular MSC.1/Circ.1666 - <i>Interim guidelines for the safety of ships using LPG fuels.</i>

## 1 PREMISE OF THE RULES

■ **Head 1.2 PREAMBLE**, item 1.2.5 has been changed and should be read as follows:

**1.2.5** The current version of IGF Code and this Rules includes regulations to meet the functional requirements for natural gas fuel. Regulations for other low-flashpoint fuels will be added to IGF Code and in this Rules as, and when, they are developed by the Organization.

The use of methyl/ethyl alcohol as fuel is covered presently by IMO Circ. MSC.1/Circ.1621 - Interim guidelines for the safety of ships using methyl/ethyl alcohol as fuel (see Part A, 2.1.2 of this Rules).

The use of Liquid Petrol Gas (LPG) fuels is covered presently by IMO Circ. MSC.1/Circ.1666 - Interim guidelines for the safety of ships using LPG fuels (see Part A, 2.1.3 of this Rules).

In the meantime, for other low-flashpoint fuels, compliance with the functional requirements of IGF Code and this Rules must be demonstrated through alternative design.

## PART A

### 2 GENERAL

■ **Head 2.1 APPLICATION**, new item 2.1.3 has been added and should be read as follows:

**2.1.3** With regard to criteria for the use of Liquid Petrol Gas (LPG) fuels, refer to IMO Circ. MSC.1/Circ.1666 - *Interim guidelines for the safety of ships using LPG fuels* (see Appendix 2 of this Rules).

■ **Head C2.1 APPLICATION**, text has been amended and should be read as follows:

*Application to existing ships is subject to the decision by the Register to the extent it deems necessary.*

*For the application of this Rules for nonconventional size ships or ships having GT less than 500, the technical and safety requirements are to be formulated by the Register in agreement with the Maritime Administration of the Government of the State whose flag the ship is entitled to fly (hereinafter referred to as the Administration).*

*This Rules are covering the natural gas, Liquid Petrol Gas (LPG) and methyl/ethyl alcohol fuel-related installations of the ship, including bunkering system in extent installed on the ship only.*

■ **Head 2.2 DEFINITIONS**, item C.2.2.10 has been amended and should be read as follows:

**C2.2.10** *NOTE: Dual fuel engines are usually defined by engine manufacturers as the engines that can burn natural gas or Liquid Petrol Gas (LPG) or methyl/ethyl alcohol as a fuel simultaneously with liquid diesel fuel, either as pilot oil (dual fuel mode or gas mode) or bigger amount of liquid diesel fuel with fuel sharing (specified dual fuel mode), and also has the capability of running on liquid diesel fuel oil only (Diesel mode, or fuel oil mode).*

## PART A-1 SPECIFIC REQUIREMENTS FOR SHIPS USING NATURAL GAS AS FUEL

### 5 SHIP DESIGN AND ARRANGEMENT

■ **Head 5.8 PROVISIONS FOR FUEL PREPARATION SPACES DESIGN**, New item C5.8.5 is added after item C5.8.4 to provide clarification on applying certain tank connection space requirements to the design of a fuel preparation room not located on an open deck and should be read as follows:

**C5.8.5 (MSC.1/Circ.1667) Access Arrangements and Associated Hazardous Areas (sections 5.11.3 and 12.5.3.2)**

- .1 The bolted hatch requirement in 5.11.3 and the associated Zone 2 hazardous area requirement in 12.5.3.2 do not apply to a fuel preparation room located below deck unless that space can also be defined as a tank connection space using the definition in 2.2.15.3.
- .2 A fuel preparation room opening into another enclosed space on the ship which is a non-hazardous space is required to be fitted with an airlock according to 5.11.2.
- .3 A fuel preparation room with direct access onto an open deck, or to a semi-enclosed space on deck, does not require an airlock. In the absence of an airlock, the area outside the door will be classified as a hazardous area according to 12.5.2.4 and 12.5.3.1.

■ **Head 5.9 REGULATIONS FOR BILGE SYSTEMS**, New item C5.9.4 is added after item 5.9.3 to provide clarification on applying bilge well requirements and should be read as follows:

**C5.9.4 (MSC.1/Circ.1667) Bilge well requirements (section 15.3.2):**

The bilge well requirements in 15.3.2 only apply to a fuel preparation room located below deck if that fuel preparation room handles fuel in its liquid phase.

## **PART A-1 SPECIFIC REQUIREMENTS FOR SHIPS USING NATURAL GAS AS FUEL**

### **9 SHIP DESIGN AND ARRANGEMENT**

■ **Head 9.2 FUNCTIONAL REQUIREMENTS**, already amended as a consequence of implementation of IACS UI GF19. No changes needed due to the requirements from MSC.1/Circ.1670 - Unified interpretation of the IGF Code

## APPENDIX 1 INTERIM GUIDELINES FOR THE SAFETY OF SHIPS USING METHYL/ETHYL ALCOHOL AS FUEL (MSC.1/CIRC.1621)

### 5 Ship design and arrangement

■ **Head 5.3 – General provisions**, Notes 1 to 3 are added for items 5.3.1, 5.3.2, 5.3.6 and note 4 at the end of head. Complete head 5.3 should be read as follows:

#### 5.3 General provisions

5.3.1 Tanks containing fuel should not be located within accommodation spaces or machinery spaces of category A (see note 1 below).

5.3.2 Integral fuel tanks should be surrounded by protective cofferdams, except on those surfaces bound by shell plating below the lowest possible waterline, other fuel tanks containing methyl/ethyl alcohol, or fuel preparation space (see note 2 below).

5.3.3 The fuel containment system should be abaft of the collision bulkhead and forward of the aft peak bulkhead.

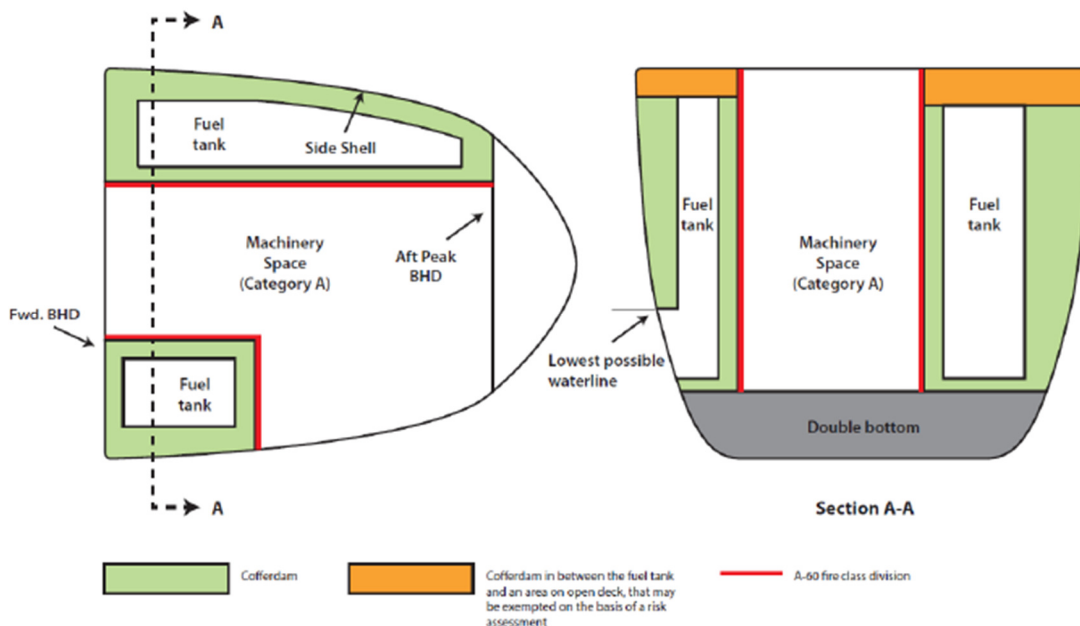
5.3.4 Fuel tanks located on open decks should be protected against mechanical damage.

5.3.5 Fuel tanks on open decks should be surrounded by coamings and spills should be collected in a dedicated holding tank.

5.3.6 Special consideration should be given to chemical tankers using methyl/ethyl alcohol cargoes as fuel (see note 3 below).

**NOTE:** (UI GF20, Jun 2024)

- .1 Integral methyl/ethyl alcohol tanks may be placed between the aftmost and foremost boundaries of the machinery spaces of Category A, provided that a cofferdam of at least 600mm width with A60 insulation is fitted between the tank and the machinery space. Integral Tanks arranged according to this UI are not regarded as being within Machinery Space of Category A.
- .2 It is possible to exempt the arrangement of cofferdams between the fuel tank and an area on open deck. Exemption would be permitted, provided the arrangement has been considered by the risk assessment as per paragraph 4.2 of MSC.1/Circ.1621 taking into account the use of the area, fire, toxicity, and possible additional construction and survey requirements.
- .3 Methyl/ethyl alcohol fuel tanks in cargo area of chemical tankers are not required to be surrounded by protective cofferdams, however the compatibility of cargo in the adjacent cargo tanks is to be considered by the risk assessment.
- .4 Typical acceptable arrangements of fuel tanks in methyl/ethyl alcohol fuelled vessels are shown below.



## APPENDIX 2

# INTERIM GUIDELINES FOR THE SAFETY OF SHIPS USING LPG FUELS (MSC.1/CIRC.1666)

■ New Appendix 2 INTERIM GUIDELINES FOR THE SAFETY OF SHIPS USING LPG FUELS (MSC.1/CIRC.1666) has been added and should be read as follows:

## 1 INTRODUCTION

1.1 The purpose of these Interim guidelines for the safety of ships using LPG fuels (Interim Guidelines) is to provide an international standard for ships using LPG as fuel.

1.2 The basic philosophy of these Interim Guidelines is to provide provisions for the arrangement, installation, control and monitoring of machinery, equipment and systems using LPG as fuel to minimize the risk to the ship, its crew and the environment, having regard to the nature of the fuels involved.

1.3 Throughout the development of these Interim Guidelines it was recognized that the provisions therein must be based on sound naval architectural and engineering principles and the best understanding available of current operational experience, field data and research and development. These Interim Guidelines address all areas that need special consideration for the use of LPG as fuel.

1.4 These Interim Guidelines follow the Generic guidelines for developing IMO goal-based standards (MSC.1/Circ.1394/Rev.2) by specifying goals and functional requirements for each section forming the basis for the design, construction and operation of ships using LPG as fuel.

1.5 The current version of these Interim Guidelines includes provisions to meet the functional requirements for LPG as fuel.

1.6 These Interim Guidelines have been closely aligned with the International Code of Safety for Ships Using Gases or Other Low-flashpoint Fuels (IGF Code), adopted by resolution MSC 391(95), as amended, in particular section 3 which is mainly text taken from chapter 3 of the IGF Code, albeit modified to reflect the recommendatory nature of these Interim Guidelines.

1.7 Wherever in these Interim Guidelines reference is made to "gas supply" as contained in the IGF Code, it should be read as "LPG supply".

## 2 GENERAL

### 2.1 APPLICATION

Unless expressly provided otherwise, these Interim Guidelines apply to ships using LPG as fuel to which part G of SOLAS chapter II-1 applies.

### 2.2 DEFINITIONS

For the purpose of these Interim Guidelines, the terms used have the meanings defined in the following paragraphs. Terms not defined have the same meaning as in SOLAS chapter II-2 and the IGF Code.

2.2.1 *LPG* means liquefied petroleum gas. It is mainly composed of a mixture of propane (C<sub>3</sub>H<sub>8</sub>) and butane (C<sub>4</sub>H<sub>10</sub>) and may contain small amounts of other hydrocarbons and impurities. In these Interim Guidelines, petroleum gas either in its liquefied or gaseous state is referred to as LPG. When it is necessary to distinguish between the liquefied state and the gas state, LPG in the liquefied state is referred to as LPG liquid, and LPG in the gaseous state is referred to as LPG gas.

2.2.2 *Fuel* in these Interim Guidelines means LPG.

2.2.3 *Auto-ignition temperature* means the lowest temperature at which the fuel spontaneously ignites in normal atmosphere without an external source of ignition, such as a flame or spark.

2.2.4 *Gas dispersion analysis* means the analysis of the dispersion behaviour of gases using appropriate modelling techniques such as computational fluid dynamics (CFD) analysis.

2.2.5 *Ventilation analysis* means the analysis of the ventilation efficiency of a space using appropriate modelling techniques such as CFD analysis.

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2.2.6 *Effectiveness of ventilation* refers to the effect of ventilation to control the diffusion and persistence of an explosive gas atmosphere due to gas leakage, depending on the degree and efficiency of ventilation (refer to IEC 60079-10-1).

2.2.7 *Degree of dilution* means a measure of the ability of ventilation or atmospheric conditions to dilute a release to a safe level. The degree of dilution is defined as high, medium and low (refer to IEC 60079-10-1, 6.5.4).

## 2.3 ALTERNATIVE DESIGN

2.3.1 These Interim Guidelines contain functional requirements for all appliances and arrangements related to the usage of LPG fuels.

2.3.2 Appliances and arrangements of LPG fuel systems may deviate from those set out in these Interim Guidelines, provided such appliances and arrangements meet the intent of the goal and functional requirements concerned and provide an equivalent level of safety to the relevant sections.

2.3.3 The equivalence of the alternative design should be demonstrated as specified in SOLAS regulation II-1/55 and approved by the Administration. However, the Administration should not allow operational methods or procedures to be applied as an alternative to a particular fitting, material, appliance, apparatus, item of equipment or type thereof which is prescribed by these Interim Guidelines.

# 3 GOAL AND FUNCTIONAL REQUIREMENTS

## 3.1 GOAL

The goal of these Interim Guidelines is to provide for safe and environmentally friendly design, construction and operation of ships and in particular their installations of systems for propulsion machinery, auxiliary power generation machinery and/or other purpose machinery using LPG as fuel.

## 3.2 FUNCTIONAL REQUIREMENTS

3.2.1 The safety, reliability and dependability of the systems should be equivalent to that achieved with new and comparable conventional oil-fuelled main and auxiliary machinery.

3.2.2 The probability and consequences of fuel-related hazards should be limited to a minimum through arrangement and system design, such as ventilation, detection and safety actions. In the event of gas leakage or failure of the risk-reducing measures, necessary safety actions should be initiated.

3.2.3 The design philosophy should ensure that risk-reducing measures and safety actions for the gas fuel installation do not lead to an unacceptable loss of power.

3.2.4 Hazardous areas should be restricted, as far as practicable, to minimize the potential risks that might affect the safety of the ship, persons on board and equipment.

3.2.5 Equipment installed in hazardous areas should be minimized to that required for operational purposes and should be suitably and appropriately certified.

3.2.6 Unintended accumulation of explosive, flammable or toxic gas concentrations should be prevented.

3.2.7 System components should be protected against external damage.

3.2.8 Sources of ignition in hazardous areas should be minimized to reduce the probability of explosions.

3.2.9 Safe and suitable fuel supply, storage and bunkering arrangements should be made capable of receiving and containing the fuel in the required state without leakage. Other than when necessary for safety reasons, the system should be designed to prevent venting under all normal operating conditions including idle periods.

3.2.10 Piping systems, containment and over-pressure relief arrangements that are of suitable design, construction and installation for their intended application should be provided.

3.2.11 Machinery, systems and components should be designed, constructed, installed, operated, maintained and protected to ensure safe and reliable operation.

3.2.12 Fuel containment system and machinery spaces containing source that might release gas into the space should be arranged and located such that a fire or explosion in either will not lead to an unacceptable loss of power or render equipment in other compartments inoperable.

3.2.13 Suitable control, alarm, monitoring and shutdown systems should be provided to ensure safe and reliable operation.

- 3.2.14 Fixed gas detection suitable for all spaces and areas concerned should be arranged.
- 3.2.15 Fire detection, protection and extinction measures appropriate to the hazards concerned should be provided.
- 3.2.16 Commissioning, trials and maintenance of fuel systems and gas utilization machinery should satisfy the goal in terms of safety, availability and reliability.
- 3.2.17 The technical documentation should permit an assessment of the compliance of the system and its components with the applicable rules, guidelines, design standards used and the principles related to safety, availability, maintainability and reliability.
- 3.2.18 A single failure in a technical system or component should not lead to an unsafe or unreliable situation.

## 4 GENERAL PROVISIONS

### 4.1 GOAL

The goal of this section is to ensure that the necessary assessments of the risks involved are carried out in order to eliminate or mitigate any adverse effect on the persons on board, the environment or the ship.

### 4.2 RISK ASSESSMENT

- 4.2.1 Unless expressly provided otherwise, the requirements of 4.2 of the IGF Code apply.
- 4.2.2 In addition to the requirements listed in 4.2.2 of the IGF Code, risk assessment should also address paragraphs 5.3.6, 6.3.3, 10.3.2, 13.3.4 and 15.2.2 of these Interim Guidelines.

### LIMITATION OF EXPLOSION CONSEQUENCES

An explosion in any space containing any potential sources of release<sup>1</sup> and potential ignition sources should not:

- .1 cause damage to or disrupt the proper functioning of equipment/systems located in any space other than that in which the incident occurs;
- .2 damage the ship in such a way that flooding of water below the main deck or any progressive flooding occur;
- .3 damage work areas or accommodation in such a way that persons who stay in such areas under normal operating conditions are injured;
- .4 disrupt the proper functioning of control stations and switchboard rooms necessary for power distribution;
- .5 damage life-saving equipment or associated launching arrangements;
- .6 disrupt the proper functioning of fire-fighting equipment located outside the explosion-damaged space;
- .7 affect other areas of the ship in such a way that chain reactions involving, inter alia, cargo, gas and bunker oil may arise; or
- .8 prevent persons access to life-saving appliances or impede escape routes.

## 5 SHIP DESIGN AND ARRANGEMENT

### 5.1 GOAL

The goal of this section is to provide for safe location, space arrangements and mechanical protection of power generation equipment, fuel storage systems, fuel supply equipment and refuelling systems.

### 5.2 FUNCTIONAL REQUIREMENTS

This chapter is related to functional requirements in 3.2.1 to 3.2.3, 3.2.5, 3.2.6, 3.2.8, 3.2.12 to 3.2.15 and 3.2.17. In particular, the following applies:

- .1 the fuel tank(s) should be located in such a way that the probability for the tank(s) to be damaged following a collision or grounding is reduced to a minimum taking into account the safe operation of the ship and other hazards that may be relevant to the ship;
- .2 fuel containment systems, fuel piping and other fuel sources of release should be so located and arranged that released gas is led to a safe location in the open air. Locations of the release should be determined taking

<sup>1</sup> Double wall fuel pipes are not considered as potential sources of release

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- into consideration the surrounding arrangement so as to minimize the possibility of accumulation of the gas released on the open space and to facilitate dispersion into the atmosphere;
- .3 the access or other openings to spaces containing fuel sources of release should be so arranged that flammable, asphyxiating or toxic gas cannot escape to spaces that are not designed for the presence of such gases taking into account the specific gravity and dispersion characteristics of LPG gas;
  - .4 fuel piping should be protected against mechanical damage;
  - .5 the propulsion and fuel supply system should be so designed that safety actions after any LPG leakage do not lead to an unacceptable loss of power; and
  - .6 the probability of a gas explosion in a machinery space with gas or low-flashpoint fuelled machinery should be minimized.

**5.3 GENERAL PROVISIONS**

5.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 5 apply.

5.3.2 In addition to 5.4 of the IGF Code, a single failure of fuel systems should not lead to a gas release in the machinery space, i.e. only gas-safe machinery space concept in accordance with the IGF Code should be accepted.

5.3.3 The requirements of 5.6 of the IGF Code do not apply to ships using LPG as fuel. ESD-protected machinery spaces may be permitted, provided that the requirements of alternative design (SOLAS II-1/55) are met to the satisfaction of the Administration.

5.3.4 In addition to the requirements in 5.7 of the IGF Code, double barrier around fuel piping systems should be continuous and not have openings in machinery spaces<sup>2</sup>.

5.3.5 In addition to the requirements in 5.9 of the IGF Code, the bilge systems in the hazardous area should be arranged separately for each space and discharged overboard or to an enclosed tank fitted with a gas detector. Where bilge piping of two or more hazardous areas is connected, means should be provided to prevent the gas in one area from entering into other areas through the connected bilge pipes.

5.3.6 In addition to the requirements in 5.10.1 of the IGF Code, drip trays identified by the risk assessment in accordance with 4.2 should be equipped with means to detect leakage and shut off the fuel if required. However, 5.10.3 of the IGF Code does not apply to ships using LPG as fuel.

5.3.7 In addition to the requirements of chapter 5 of the IGF Code, the following provisions on pipe vents and pressure relief devices apply:

- .1 LPG gas line from the following should be led to a vent mast:
  - .1 the pressure relief valve of the tank; and
  - .2 vent lines and bleed lines for gas fuel systems; and
- .2 LPG liquid line from the following should be led to a fuel tank. Where it is not practicable, the line may be led to a vent mast but liquid release from the outlet of vent is not acceptable:
  - .1 the pressure relief valve of the liquid fuel supply pipe;
  - .2 vent line and bleed line of liquid fuel supply piping; and
  - .3 pressure relief valve in bunkering line.

**6 FUEL CONTAINMENT SYSTEM****6.1 GOAL**

The goal of this section is to provide that LPG storage is adequate so as to minimize the risk to personnel, the ship and the environment to a level that is equivalent to a conventional oil-fuelled ship.

**6.2 FUNCTIONAL REQUIREMENTS**

This section relates to functional requirements 3.2.1, 3.2.2, 3.2.5 and 3.2.8 to 3.2.17. In particular, the following applies:

- .1 the fuel containment system should be so designed that a leak from the tank or its connections does not endanger the ship, persons on board or the environment. Potential dangers to be avoided include:
  - .1 exposure of ship materials to temperatures below acceptable limits;
  - .2 flammable fuels spreading to locations with ignition sources;
  - .3 toxicity potential and risk of oxygen deficiency due to fuels and inert gases;

<sup>2</sup> Refer to IGF Code paragraph 5.5

- .4 restriction of access to muster stations, escape routes and life-saving appliances (LSA);
- .5 reduction in availability of LSA; and
- .2 the pressure and temperature in the fuel tank should be kept within the design limits of the containment system and possible carriage requirements of the fuel;
- .3 the fuel containment arrangement should be so designed that safety actions after any LPG leakage do not lead to an unacceptable loss of power;
- .4 if portable tanks are used for fuel storage, the design of the fuel containment system should be equivalent to permanent installed tanks as described in this section; and
- .5 the fuel containment system should be designed considering various characteristics of all possible compositions of the LPG.

### 6.3 GENERAL PROVISIONS

- 6.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 6 apply.
- 6.3.2 The provision of 6.3.1 of the IGF Code does not apply to ships using LPG as fuel.
- 6.3.3 In addition to 6.3.4 of the IGF Code, the following applies: For the fuel tank located in enclosed space, a tank connection space should be provided separately from fuel storage hold space. For the fuel tank located on an open deck, a tank connection space should also be provided where escaped gas may accumulate on the open deck or enter in non-hazardous space such as accommodation space and machinery space based on the risk assessment.
- 6.3.4 In addition to 6.4.2.1 of the IGF Code, no secondary barrier should be required where the fuel temperature at atmospheric pressure is at or above -10°C. Where the fuel temperature at atmospheric pressure is not below -55°C, the hull structure may act as a secondary barrier.
- 6.3.5 The provision of 6.6 of the IGF Code does not apply to ships using LPG as fuel.
- 6.3.6 In addition to 6.7.2.7 of the IGF Code, vent exits should be so located that the following are ensured:<sup>3</sup>
- .1 escaped LPG gas does not escape to non-hazardous areas through the opening around the vent exit;
  - .2 escaped LPG gas is not trapped by any structure on an open deck; and
  - .3 escaped LPG gas does not form a flammable atmosphere in the way of exhaust gas outlets and other ignition sources.
- 6.3.7 In addition to 6.7.2 of the IGF Code, the vent piping system should be fitted with an inert gas purging interface.

## 7 MATERIAL AND GENERAL PIPE DESIGN

Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 7 apply.

## 8 BUNKERING

### 8.1 GOAL

The goal of this section is to provide for suitable systems on board the ship to ensure that bunkering can be conducted without causing danger to persons, the environment or the ship.

### 8.2 FUNCTIONAL REQUIREMENTS

- 8.2.1 This section relates to functional requirements 3.2.1 to 3.2.11 and 3.2.13 to 3.2.17. In particular, the following applies:
- 8.2.2 The piping system for transfer of fuel to the storage tank should be designed such that any leakage from the piping system cannot cause danger to personnel, the environment or the ship.
- 8.2.3 Bunkering systems should be suitable for temperature, pressure and all compositions of LPG used on board.
- 8.2.4 Means should be provided to manage vapour generated in the tank during bunker transfer. Where means of vapour managements are not provided on ship, vapour return connection should be fitted at bunkering manifold.

<sup>3</sup> According to a gas dispersion analysis, if required by the risk assessment

## 8.3 PROVISIONS

- 8.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 8 apply.
- 8.3.2 For ships using LPG as fuel, 8.3.1.6 of the IGF Code is not applicable.

# 9 FUEL SUPPLY TO CONSUMERS

## 9.1 GOAL

The goal of this section is to ensure safe and reliable distribution of fuel to the consumers.

## 9.2 FUNCTIONAL REQUIREMENTS

This section is related to functional requirements 3.2.1 to 3.2.6, 3.2.8 to 3.2.11 and 3.2.13 to 3.2.17. In particular, the following applies:

- .1 the fuel supply system should be so arranged that the consequences of any release of fuel will be minimized, while providing safe access for operation and inspection;
- .2 the piping system for fuel transfer to the consumers should be designed in a way that a failure of one barrier cannot lead to a leak from the piping system into the surrounding area causing danger to the persons on board, the environment or the ship;
- .3 fuel lines outside the machinery spaces should be installed and protected so as to minimize the risk of injury to personnel and damage to the ship in case of leakage;
- .4 fuel supply systems should be able to supply fuel at the required pressure, temperature and flow rate; and
- .5 where fuel supply systems supply LPG in the liquid state, purging, drain, vent and leakage should be subject to special consideration to provide an equivalent level of safety of fuel in the gas state.

## 9.3 PROVISIONS

- 9.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 9 apply.
- 9.3.2 Notwithstanding 9.4.4 of the IGF Code, where fuel supply systems supply LPG in the liquid state, relevant bleed lines should be led to the fuel tank or gas-liquid separator or similar device to prevent LPG liquid from being released to the atmosphere.
- 9.3.3 In addition to 9.4.7 of the IGF Code, where fuel supply systems supply LPG in the liquid state, vent lines should be led to the fuel tank or gas-liquid separator or similar device.
- 9.3.4 The provision of 9.4.10 of the IGF Code does not apply to ships using LPG as fuel.
- 9.3.5 The provision of 9.7 of the IGF Code does not apply to ships using LPG as fuel.
- 9.3.6 In addition to 9.8.2 of the IGF Code, the most conservative value of  $k$  should be selected for considering expected composition of fuel (propane: 1.13, butane: 1.096)

# 10 POWER GENERATION INCLUDING PROPULSION AND OTHER GAS CONSUMERS

## 10.1 GOAL

The goal of this section is to provide safe and reliable delivery of mechanical, electrical or thermal energy.

## 10.2 FUNCTIONAL REQUIREMENTS

This section is related to functional requirements 3.2.1, 3.2.11, 3.2.13, 3.2.16 and 3.2.17. In particular, the following applies:

- .1 the exhaust systems should be configured to prevent any accumulation of unburnt gaseous fuel;
- .2 unless designed with the strength to withstand the worst case over pressure due to ignited gas leaks, engine components or systems containing or likely to contain an ignitable gas and air mixture should be fitted with

suitable pressure relief systems. Dependent on the particular engine design, this may include the air inlet manifolds and scavenge spaces;

- .3 the explosion venting should be led away from where personnel may normally be present;
- .4 all gas consumers should have a separate exhaust system; and
- .5 fuel consumers should be suitably designed for operation with possible compositions of LPG fuel.

### **10.3 PROVISIONS**

10.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 10 apply.

10.3.2 Notwithstanding 10.5.2 of the IGF Code, the gas turbine should be fitted in a gastight enclosure arranged in accordance with 10.5.3 of the IGF Code. Gas leakage in the gastight enclosure and the consequence should be evaluated based on the risk assessment in accordance with 4.2 and to the satisfaction of the Administration.

10.3.3 Notwithstanding 10.3.1.7 of the IGF Code, if combustion has not been detected by the engine monitoring system within an engine-specific time after the opening of the fuel supply valve, the fuel supply valve should be automatically shut off. Means to ensure that any unburnt fuel mixture is purged away from the exhaust system should be provided.

## **11 FIRE SAFETY**

### **11.1 GOAL**

The goal of this section is to provide for fire protection, detection and fighting for all system components related to the storage, conditioning, transfer and use of LPG as ship fuel.

### **11.2 FUNCTIONAL REQUIREMENTS**

This section is related to functional requirements 3.2.2, 3.2.4, 3.2.5, 3.2.7, 3.2.12, 3.2.14, 3.2.15 and 3.2.17.

### **11.3 PROVISIONS**

11.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 11 apply.

11.3.2 In addition to 11.3.1 of the IGF Code, the fuel preparation room should be separated from a machinery space of category A and 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.

11.3.3 In addition to the requirements of IGF Code chapter 11, a fuel preparation room should be provided with a fixed fire-extinguishing system complying with the provisions of the FSS Code and taking into account the necessary concentrations/application rate required for extinguishing LPG gas fires.

## **12 EXPLOSION PREVENTION**

### **12.1 GOAL**

The goal of this section is to provide for fire protection, detection and fighting for all system components related to the storage, conditioning, transfer and use of LPG as ship fuel.

### **12.2 FUNCTIONAL REQUIREMENTS**

This section is related to functional requirements 3.2.2 to 3.2.5, 3.2.7, 3.2.8, 3.2.12 to 3.2.14 and 3.2.17. In particular, the following applies:

The probability of explosions should be reduced to a minimum by:

- .1 reducing number of sources of ignition; and
- .2 reducing the probability of formation of ignitable mixtures.

## 12.3 PROVISIONS

12.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 12 apply.

12.3.2 The classification of a hazardous area should be subject to special consideration to characteristics of LPG (e.g. density, LEL). IEC 60079-10-1 may be referred, if necessary, to determine hazardous areas.

## 13 VENTILATION

### 13.1 GOAL

The goal of this section is to provide for the ventilation required for safe operation of LPG-fuelled machinery and equipment.

### 13.2 FUNCTIONAL REQUIREMENTS

This section is related to functional requirements 3.2.2, 3.2.5, 3.2.8, 3.2.10, 3.2.12 to 3.2.14 and 3.2.17. In particular, the capacity and layout of ventilation system should be so designed that efficiency of ventilation is ensured considering the density of LPG gas.

### 13.3 PROVISIONS

13.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 13 apply.

13.3.2 In addition to 13.3.5 of the IGF Code, air outlets and air inlets for hazardous enclosed spaces should be arranged to prevent exhausted gas from re-entering the space through air inlets, based on the risk assessment in accordance with 4.2 and to the satisfaction of the Administration.

13.3.3 In addition to 13.3.8 of the IGF Code, when determining the required ventilation capacity, special consideration should be given to the density and lower explosion limit (LEL) of LPG gas, which should be supported by numerical calculations such as CFD analysis.

13.3.4 In addition to 13.4.2 of the IGF Code, approved automatic fail-safe fire dampers should be fitted in the ventilation trunk for the tank connection space, fuel preparation room or any other space as deemed necessary by a risk assessment in accordance with 4.2 and to the satisfaction of the Administration.

13.3.5 The number and location of the extraction points of the ventilation in each space should be considered taking into account the size and layout of the space. Where bottom arrangements are complicated, it should be demonstrated based on ventilation analysis that capacity and duct arrangements of ventilation are adequate for the space.

13.3.6 The provisions in 13.5.2, 13.5.3 and 13.5.4 of the IGF Code do not apply to ships using LPG as fuel.

13.3.7 Notwithstanding 13.8.3 of the IGF Code, the ventilation inlet for the double wall piping or duct should always be located in an open area away from ignition sources. The inlet opening should be fitted with a suitable wire mesh guard and protected from ingress of water.

## 14 ELECTRICAL INSTALLATIONS

### 14.1 GOAL

The goal of this section is to provide for electrical installations that minimize the risk of ignition in the presence of a flammable atmosphere.

### 14.2 FUNCTIONAL REQUIREMENTS

This section is related to functional requirements 3.2.1, 3.2.2, 3.2.4, 3.2.7, 3.2.8, 3.2.11, 3.2.13 and 3.2.16 to 3.2.18. In particular, the following applies:

Electrical generation and distribution systems, and associated control systems, should be designed such that a single fault will not result in the loss of ability to maintain fuel tank pressures and hull structure temperature within normal operating limits.

## 14.3 PROVISIONS

14.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 14 apply.

14.3.2 In addition to 14.3.3 of the IGF Code, equipment for hazardous areas should be of a certified safe type appropriate for compositions of LPG in accordance with IEC 60079-20. IEC 60079-20 classifies the temperature class and equipment groups for propane and butane as the following:

	Temperature class	Equipment group
Propane	T2	IIA
Butane	T2	IIA

Equipment should be certified to IEC temperature class T2 and equipment group IIA.

## 15 CONTROL, MONITORING AND SAFETY SYSTEMS

### 15.1 GOAL

15.1.1 The goal of this section is to provide for the arrangement of control, monitoring and safety systems that support an efficient and safe operation of the LPG-fuelled installation as covered in the other sections of these Interim Guidelines.

### 15.2 FUNCTIONAL REQUIREMENTS

This section is related to functional requirements 3.2.1, 3.2.2, 3.2.11, 3.2.13 to 3.2.15, 3.2.17 and 3.2.18. In particular, the following applies:

- .1 the control, monitoring and safety systems of the LPG-fuelled installation should be so arranged that the remaining power for propulsion and power generation is in accordance with 9.3.1 of the IGF Code in the event of single failure;
- .2 a safety system should be arranged to close down the fuel supply system automatically, upon failure in systems as described in table 1 (Monitoring of gas supply system to engines) in chapter 15 of the IGF Code and upon other fault conditions which may develop too fast for manual intervention;
- .3 for ESD protected machinery configurations, where allowed by alternative design, the safety system should shut down LPG supply upon LPG leakage and, in addition, disconnect all non-certified safe type electrical equipment in the machinery space;
- .4 the safety functions should be arranged in a dedicated safety system that is independent of the control system in order to avoid possible common cause failures. This includes the power supply and input and output signal;
- .5 the safety systems including the field instrumentation should be arranged to avoid spurious shutdown, e.g. as a result of a faulty gas detector or a wire break in a sensor loop; and
- .6 where two or more fuel supply systems are required to meet the provisions, each system should be fitted with its own set of independent control and safety systems.

### 15.3 PROVISIONS

15.3.1 Unless expressly provided otherwise, the requirements of IGF Code part A-1 chapter 15 apply.

15.3.2 In addition to 15.8.1 of the IGF Code, permanently installed gas detectors should be fitted at ventilation inlets of accommodation and machinery spaces and other rooms with high fire risk,<sup>4</sup> unless an Administration deems it unnecessary based on a risk assessment in accordance with 4.2, as well as at the bunkering station as required in section 8 of these Interim Guidelines.

15.3.3 In addition to 8.3.1 of the IGF Code, bunkering manifolds should be continuously monitored by the ship's crew from a safe area in direct line of sight of the manifold or by CCTV during bunker transfer.

## 16 ADDITIONAL PROVISIONS

Unless expressly provided otherwise, the IGF Code parts B-1, C-1 and D apply to ships using LPG as fuel.

<sup>4</sup> Other rooms with high fire risk, as defined in section 2 of the annex to MSC.1/Circ.1591