

**RULES
FOR THE CLASSIFICATION OF
SHIPS**

*Part 12 – ELECTRICAL EQUIPMENT
July 2023*

*Amendments No. 4
January 2026*

CROATIAN REGISTER OF SHIPPING

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

Amendments No. 4 to the
RULES FOR THE CLASSIFICATION OF SHIPS
Part 12 – ELECTRICAL EQUIPMENT

have been adopted on 22nd December 2025 and shall enter into force on 1 January 2026

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 I - 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, appointers, 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 12 – Electrical equipment, edition July 2023, as last amended by Amendments No. 3 edition July 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 Organizations:

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)

Resolutions: MSC.474(102)

International Association of Classification Societies (IACS)

Unified Requirements (UR):

E5 (Rev.1, 2005), E7 (Rev.5, 2021), E9 (Rev.1, 2012), E10 (Rev.10, Aug. 2024), E11 (Rev.4, 2021), E12 (Rev.2, 2020), E13 (Rev.3 Corr.1, 2022), E15 (Rev.4, 2020), E16 (2002), E17 (Rev.1, 2021), E18 (Rev.1, 2014), E19 (Rev.1, 2005), E20 (Rev.1, 2009), E21 (Rev.1, 2024), E22 (Rev.3, corr. 1 Sep 2025), E24 (Rev.1, 2018), E25 (Rev.2, 2022), E26 (Rev.1, 2023), E27 (Rev.1, 2023), M64 (Rev.1, 2004)

Unified Interpretations (UI):

SC1 (Rev.2, 2021), SC3 (Rev.1, 1999), SC6 (Rev.1, 2019), SC7 (1985), SC8 (1985), SC9 (1985), SC10 (Rev.3, 2021), SC11 (Rev.1, 2021), SC12 (1985), SC13 (1985), SC17 (Rev.3, 2020), SC70 (Rev.4 Corr.1, 2023), SC83 (1993), SC94 (Rev.2 Corr.1, 2018), SC95 (1994), SC124 (Rev.1 Corr.1, 2007), SC134 (2002), SC136 (Rev.3, 2005), SC151 (1999), SC152 (1999), SC157 (Rev.1, 2005), SC176 (Rev.1, 2004), SC180 (Rev.4, 2021), SC184 (Rev.1, 2005), SC185 (Rev.1, 2005), SC186 (Corr.1, 2010), SC187 (2004), SC194 (Rev.1, 2021), SC 274 (Rev.1, 2021), SC290 (2018), SC305(2024)

Unified Recommendations:

Rec. 73 (Rev.3, 2023), Rec. 35 (Rev.2, 2021), Rec. 120 (2015), Rec. 178 (2023), Rec. 179 (2023), Rec 182 (2024), Rec. 187 (May 2025), Rec. 190 (June 2025)

TABLE 1 – REVIEW OF AMENDMENTS

This review comprises amendments in relation to the Rules for the Classification of Ships, Part 12 – Electrical equipment, edition July 2023 as last amended by Amendments No. 4 edition July 2025.

<i>ITEM</i>	<i>DESCRIPTION OF THE AMENDMENTS</i>
RULES INPUTS	
	Amended with reference to IACS UE E10, Rev. 10, 2024. No changes within the text.
	Amended with reference to IACS Rec. 190, 2025. No changes within the text.
SECTION 2 – CONSTRUCTION OF ELECTRICAL EQUIPMENT	
Head 2.10 – COMPUTER-BASED SYSTEM	Item 2.10.6.12.2 has been amended with reference to IACS Rec.187, May 2025.
SECTION 3 – MAIN ELECTRICAL POWER SOURCES	
Head 3.1 – NUMBER AND POWER OF ELECTRICAL SOURCES	Item 3.1.3 has been amended to include the correct reference to the revised Head 9.3 and Item 19.1.2.
SECTION 5 – ELECTRICAL DRIVES FOR SHIP MECHANISMS AND EQUIPMENT	
Head 5.13 – REQUIREMENTS FOR UNINTERRUPTIBLE POWER SYSTEM (UPS) UNITS	Item 5.13.1 has been amended to include the correct reference to the revised Head 9.3 and Item 19.1.2.
SECTION 6 – LIGHTING	
Head 6.1 – GENERAL REQUIREMENTS	Item 6.1.1 has been amended to include the correct reference to the revised Head 9.3 and Item 19.1.2.
Head 6.3 – EMERGENCY LIGHTING	Item 6.3.1 has been amended to include the correct reference to the revised Head 9.3 and Item 19.1.2.
SECTION 7 – INTERNAL COMMUNICATION, ALARMS AND SIGNALLING	
Head 7.4 – GENERAL ALARM SYSTEM	Item 7.4.3 has been amended to include the correct reference to the revised Head 9.3 and Item 19.1.2.
SECTION 9 – EMERGENCY SOURCE OF ELECTRICAL POWER	
Head 9.3 – EMERGENCY SOURCE OF ELECTRICAL POWER IN CARGO SHIPS	Existing Head 9.3 has been completely revised to align with the SOLAS 74, as amended, and to include the new IACS Rec. 187, May 2025.
Head 9.4 – DISTRIBUTION OF ELECTRICAL POWER FROM EMERGENCY SOURCE	Items 9.4.3 and 9.4.4 have been amended to include the correct reference to the revised Head 9.3 and Item 19.1.2.
Head 9.5 – STARTING ARRANGEMENTS FOR EMERGENCY DIESEL GENERATORS	Item 9.5.2 has been amended to include the correct reference to the revised Head 9.3.
SECTION 17 – ELECTRICAL PROPULSION PLANT	
Head 17.3 – ELECTRICAL MACHINES	New item 17.3.4 has been added with reference to new IACS UI SC305, Dec. 2024.
SECTION 19 – SPECIAL REQUIREMENTS FOR ELECTRICAL EQUIPMENT WITH RESPECT TO SHIP PURPOSE	
Head 19.1 – SPECIAL REQUIREMENTS FOR ELECTRICAL EQUIPMENT WITH RESPECT TO SHIP PURPOSE	Existing item 19.1.2 has been completely revised to align with the SOLAS 74, as amended, and to include the new IACS Rec. 187, May 2025.

2 CONSTRUCTION OF ELECTRICAL EQUIPMENT

■ **Head 2.10 – COMPUTER-BASED SYSTEMS**, item 2.10.6.12.2 has been changed and should be read as follows:

2.10.6.12.2 During newbuilding

The verification of management of change in the newbuilding phase is divided into two; Procedures are verified as a part of the verification of the quality management system (2.10.4.1.2), while project specific implementation of the procedures **are verified during FAT (2.10.4.2.7), SAT (2.10.4.3.6), and SOST (2.10.4.3.7) activities.**

3 MAIN ELECTRICAL POWER SOURCES

■ **Head 3.1 – NUMBER AND POWER OF ELECTRICAL SOURCES**, item 3.1.3 has been changed and should be read as follows:

3.1.3 The number and the power of independently driven generators and electrical transducers, if they constitute a part of the main source of electrical power, shall be such that, if any of them failed, the remaining power is sufficient for:

- .1 supplying the essential consumers under conditions referred to in 1.2.5 simultaneously assuring life conditions referred to in 1.2.6, except of those are to be considered:
 1. Thrust's not forming part of the main propulsion
 2. Mooring
 3. Cargo handling gear
 4. Cargo pumps
- .2 starting the most powerful electrical motor with the greatest starting current and the longest starting time what shall not cause a voltage and frequency drop in the mains that could result in a fall of generator out of synchronism, stop of generator prime mover or disconnection from mains of motors and apparatus being in operation;
- .3 supplying the consumers necessary to start the propulsion plant with the ship completely de-energised. For this purpose, emergency electrical power source may be used, if its own power or its power combined with the power of any other electrical source, is sufficient to ensure a simultaneous supply of consumers referred to in 9.3.1 or 19.1.2.1 (see also the *Rules for the classification of ships, Part 7 - Machinery Installations*, 1.4.7).

5 ELECTRICAL DRIVES FOR SHIP MECHANISMS AND EQUIPMENT

■ **Head 5.13 - REQUIREMENTS FOR UNINTERRUPTIBLE POWER SYSTEM (UPS) UNITS**, item 5.13.1 has been changed and should be read as follows:

- 5.13.1** These requirements apply to UPS units, for the following cases:
- .1 when providing an alternative power supply as an accumulator battery in terms of being an independent power supply for the emergency services defined in 9.3.1.4 and 19.1.2.1.3;
 - .2 when providing an alternative power supply or transitional power supply to any other emergency services as defined in sections 9 and 19;
 - .3 where required, constituting a means of continuous and uninterruptible power supply to essential services, or
 - .4 when providing power supply in accordance with conditions specified and mandated by FSS Code Chapter 9, 2.2.2 to 2.2.4.

6 LIGHTING

■ **Head 6.1 – GENERAL REQUIREMENTS**, item 6.1.1 has been changed and should be read as follows:

6.1.1 In all ship's rooms, spaces and locations where the illumination is essential for safety of navigation, control of machinery and gear devices as well as residence and evacuation of passengers and crew, stationary main lighting fixtures shall be provided, which shall be supplied from the main source of electrical power.

The list of rooms, spaces and locations where the emergency lighting fixtures shall be installed in addition to main lighting, is referred to in 9.3.1.1, 9.3.1.2 and 19.1.2.1.1.

■ **Head 6.3 – EMERGENCY LIGHTING**, item 6.3.1 has been changed and should be read as follows:

6.3.1 The illumination intensity obtained from the emergency lighting fixtures in rooms, spaces and locations referred to in 9.3.1.1, 9.3.1.2 and 19.1.2.1.1 shall be at least equal to 10 per cent of the illumination intensity of the main lighting fixtures (see 6.7). In the machinery space the illumination from the emergency lighting fixtures shall be equal to 5 per cent of the main illumination if the socket outlets fed from the emergency lighting circuit are provided. The illumination intensity of the evacuation paths to the deck shall be at least 5 Lx.

7 INTERNAL COMMUNICATION, ALARMS AND SIGNALLING

■ **Head 7.4 - GENERAL ALARM SYSTEM**, item 7.4.3 has been changed and should be read as follows:

7.4.3 General alarm system shall be supplied from the main switchboard and from the emergency switchboard in accordance with **9.3.1.4 and 19.1.2.1.3** and from the transition source of electrical power in accordance with **9.3.4.2 and 19.1.2.7.1.2**.

General alarm system may be supplied from the main switchboard and from an independent accumulator battery if provision is made for an automatic change-over of general alarm circuits to the battery in case of voltage loss on the ship's mains. In this case, no supply either from the emergency source or from a transition source of electrical power is necessary.

9 EMERGENCY SOURCE OF ELECTRICAL POWER

■ **Head 9.3 – EMERGENCY SOURCE OF ELECTRICAL POWER IN CARGO SHIPS** has been changed and should be read as follows:

9.3 EMERGENCY SOURCE OF ELECTRICAL POWER IN CARGO SHIPS

9.3.1 The emergency source of electrical power shall be capable of supplying simultaneously at least the following services for the periods specified hereafter, if they depend upon an electrical source for their operation:

- .1 For a period of 3 h, emergency lighting at every muster and embarkation station and over the sides as required by SOLAS Ch. III/11.4 and III/16.7.
- .2 For a period of 18 h, emergency lighting:
 - .1 in all service and accommodation alleyways, stairways and exits, personnel lift cars and personnel lift trunks;
 - .2 in the machinery spaces and main generating stations including their control positions;
 - .3 in all control stations, machinery control rooms, and at each main and emergency switchboard;
 - .4 at all stowage positions for firemen's outfits;
 - .5 at the steering gear;
 - .6 at the fire pump referred to in 9.3.1.5, at the sprinkler pump, if any, and at the emergency bilge pump, if any, and at the starting positions of their motors; and;
 - .7 in all cargo pump-rooms of tankers.
- .3 For a period of 18 h:
 - .1 the navigation lights and other lights required by the International Regulations for Preventing Collisions at Sea in force;
 - .2 the VHF radio installation required by SOLAS Ch. IV/7.1.1 and IV/7.1.2, and, if applicable:
 - .1 the MF radio installation required by SOLAS Ch. IV/9.1.1, IV/9.1.2, IV/10.1.2 and IV/10.1.3;
 - .2 the ship earth station required by SOLAS Ch. IV/10.1.1; and
 - .3 the MF/HF radio installation required by SOLAS Ch. IV/11.1.1 and IV/11.1.2.
- .4 For a period of 18 h:
 - .1 all internal communication equipment as required in an emergency:
 - .1 the means of communication which is provided between the navigating bridge and the steering gear compartment;
 - .2 the means of communication which is provided between the navigating bridge and the position in the machinery space or control room from which the engines are normally controlled;
 - .3 the means of communication which is provided between the bridge and the radio telegraph or radio telephone stations, where separately arranged outside the bridge;
 - .4 the general emergency alarm system as required by SOLAS Ch. III/6.4.2;
 - .5 the public address system required by SOLAS Ch. III/6.4.2.
 - .2 the shipborne navigational equipment as required by SOLAS Ch. V/19; where such provision is unreasonable or impracticable the *Register* may waive this requirement for ships of less than 5,000 tons gross tonnage;
 - .3 the fire detection and fire alarm system; and;
 - .4 intermittent operation of the daylight signalling lamp, the ship's whistle, the manually operated call points and all internal signals that are required in an emergency; unless such services have an independent supply for the period of 18 hours from an accumulator battery suitably located for use in an emergency.
- .5 For a period of 18 h one of the fire pumps required by the *Rules for the classification of ships, Part 17 - Fire Protection - 10.2.2.2* if dependent upon the emergency generator for its source of power.
- .6 For the period of time required in 5.5.6, the steering gear where it is required to be so supplied.

9.3.1.1 For ships of restricted areas of navigation 3, 4, 5, (6), 7, 8 with a gross tonnage of 300 GT and over, the period of 18 hours may be reduced to 12 hours, for ships of less than 300 GT of unrestricted area of navigation 1 and area of navigation 2 great coastal service, the period of 18 hours may be changed to 6 hours and for restricted areas of navigation 3, 4, 5, (6), 7, 8, to 3 hours.

NOTE: For ships for which SOLAS is not applicable, a reduced period of time may be accepted.

- 9.3.2** Where the emergency source of electrical power is a generator, it shall be:
- .1 driven by a suitable prime mover with an independent supply of fuel, having a flashpoint (closed cup test) of not less than 43 °C;
 - .2 started automatically upon failure of the main source of electrical power supply unless a transitional source of emergency electrical power in accordance with 9.3.2.3 is provided; where the emergency generator is automatically started, it shall be automatically connected to the emergency switchboard; those services referred to in 9.3.4 shall then be connected automatically to the emergency generator; and

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.3 provided with a transitional source of emergency electrical power as specified in 9.3.4 unless an emergency generator is provided capable both of supplying the services mentioned in that paragraph and of being automatically started and supplying the required load as quickly as is safe and practicable subject to a maximum of 45 s.

9.3.3 Where the emergency source of electrical power is an accumulator battery it shall be capable of:

- .1 carrying the emergency electrical load without recharging while maintaining the voltage of the battery throughout the discharge period within 12% above or below its nominal voltage;
- .2 automatically connecting to the emergency switchboard in the event of failure of the main source of electrical power; and
- .3 immediately supplying at least those services specified in 9.3.4.

9.3.4 The transitional source of emergency electrical power where required by paragraph 9.3.2.3 shall consist of an accumulator battery suitable located for use in an emergency which shall operate without recharging while maintaining the voltage of the battery throughout the discharge period within 12% above or below its nominal voltage and be of sufficient capacity and shall be so arranged as to supply automatically in the event of failure of either the main or the emergency source of electrical power for half an hour at least the following services if they depend upon an electrical source for their operation:

- .1 the lighting required by 9.3.1.1, 9.3.1.2 and 9.3.1.3.1. For this transitional phase, the required emergency electric lighting, in respect of the machinery space and accommodation and service spaces may be provided by permanently fixed, individual, automatically charged, relay operated accumulator lamps; and
- .2 all services required by 9.3.1.4.1, 9.3.1.4.3 and 9.3.1.4.4 unless such services have an independent supply for the period specified from an accumulator battery suitably located for use in an emergency.

9.3.5 Where the emergency and/or transitional emergency loads are supplied from a battery via an electronic converter the maximum permitted d.c. voltage variations are to be taken as those the load side of the converter or inverter.

Where the d.c. converted into a.c. the maximum variation are not exceed those given in 2.1.

■ **Head 9.4 - DISTRIBUTION OF ELECTRICAL POWER FROM EMERGENCY SOURCE**, items 9.4.3 and 9.4.4 has been changed and should be read as follows:

9.4.3 Consumers mentioned in 9.3.1 and 19.1.2 shall be supplied through separate feeders from the emergency switchboard fitted up with relevant switching and protection devices. The consumers mentioned in 9.3.1.3, 9.3.1.4, 19.1.2.1.2 and 19.1.2.1.3 may be supplied from the main control console on the navigating bridge supplied in accordance with 4.5.2.

9.4.4 Where a transitional source of power is available, consumers referred to in 9.3.4 and 19.1.2.7 shall be supplied through a special switchboard on which switching devices need not be fitted.

■ **Head 9.5 - STARTING ARRANGEMENTS FOR EMERGENCY DIESEL GENERATORS**, item 9.5.2 has been changed and should be read as follows:

9.5.2 Each emergency diesel generating set arranged to be automatically started as mentioned in 9.3.2.2 shall be equipped with a starting system approved by the *Register* with a stored energy capable of at least three consecutive starts.

Another source of energy shall be provided for additional three starts within 30 min. unless manual starting is affected.

17 ELECTRICAL PROPULSION PLANT

■ **Head 17.3 - ELECTRICAL MACHINES**, item 17.3.4 has been added and should be read as follows:

17.3.4 Single essential propulsion components and their reliability

17.3.4.1 The possibility of failures in electric machines shall be considered. Sufficient propulsion capacity shall be maintained or restored within due time for the following failure modes of electric machines, as a minimum:

- .1 winding insulation failures; and
- .2 excitation failures.

17.3.4.2 Single electric propulsion motors (both single and dual winding with a single rotor) for main propulsion shall not be considered to provide the reliability required for a single essential propulsion component. A separate propulsion unit sufficient to give the ship a navigable speed should be required for such arrangements.

17.3.4.3 Propulsion arrangements with two independent rotors on a single shaft shall be considered to provide the required reliability, provided it is possible to de-excite or de-flux each of the rotors individually and to supply independently the stators.

19 SPECIAL REQUIREMENTS FOR ELECTRICAL EQUIPMENT WITH RESPECT TO SHIP PURPOSE

■ **Head 19.1 – PASSENGER SHIPS**, item 19.1.2 has been changed and should be read as follows:

19.1.2 Supply from emergency sources of electrical power

19.1.2.1 The emergency source of electrical power shall be capable of supplying simultaneously at least the following services for the periods specified hereafter, if they depend upon an electrical source for their operation:

- .1 For a period of 36 h, emergency lighting:
 - .1 at every muster and embarkation station and over the sides as required by SOLAS Ch. III/11.4 and III/16.7;
 - .2 in alleyways, stairways and exits giving access to the muster and embarkation stations, as required by SOLAS Ch. III/11.5;
 - .3 in all service and accommodation alleyways, stairways and exits, personnel lift cars;
 - .4 in the machinery spaces and main generating stations including their control positions;
 - .5 in all control stations, machinery control rooms, and at each main and emergency switchboard;
 - .6 at all stowage positions for firemen's outfits;
 - .7 at the steering gear; and;
 - .8 at the fire pump, the sprinkler pump and the emergency bilge pump referred to in 19.1.2.1.4 and at the starting position of their motors.
- .2 For a period of 36 h:
 - .1 the navigation lights and other lights required by the International Regulations for Preventing Collisions at Sea in force; and
 - .2 the VHF radio installation required by SOLAS Ch. IV/7.1.1 and IV/7.1.2, and, if applicable:
 - .1 the MF radio installation required by SOLAS Ch. IV/9.1.1, IV/9.1.2, IV/10.1.2 and IV/10.1.3;
 - .2 the ship earth station required by SOLAS Ch. IV/10.1.1; and
 - .3 the MF/HF radio installation required by SOLAS Ch. IV/11.1.1 and, IV/11.1.2.
- .3 For a period of 36 h:
 - .1 all internal communication equipment as required in an emergency:
 - .1 the means of communication which is provided between the navigating bridge and the steering gear compartment;
 - .2 the means of communication which is provided between the navigating bridge and the position in the machinery space or control room from which the engines are normally controlled;
 - .3 the means of communication which is provided between the bridge and the radio telegraph or radio telephone stations, where separately arranged outside the bridge;
 - .4 the general emergency alarm system as required by SOLAS Ch. III/6.4.2;
 - .5 the public address system required by SOLAS Ch. III/6.5.4;
 - .6 the means of communication which is provided between the officer of the watch and the person responsible for closing any watertight door which is not capable of being closed from a central control station as defined in SOLAS Ch. II-2/3.9;
 - .7 the means of communication which is provided between the navigating bridge and the fire control station;
 - .8 the means of communication which is provided between the safety centre, the central control station, the navigation bridge, the engine control room, the storage room(s) for fire extinguishing system(s) and fire equipment lockers, as required by SOLAS Ch. II-2/23.5;
 - .9 internal communications in support of fire-fighting as required for passenger and crew notification and evacuation, as required by SOLAS Ch. II-2/22.3.1.2.
 - .2 the shipborne navigational equipment as required by SOLAS Ch. V/19; where such provision is unreasonable or impracticable the *Register* may waive this requirement for ships of less than 5,000 tons gross tonnage;
 - .3 the fire detection and fire alarm system, and the fire door holding and release system; and
 - .4 for intermittent operation of the daylight signalling lamp, the ship's whistle, the manually operated call points and all internal signals that are required in an emergency; unless such services have an independent supply for the period of 36 hours from an accumulator battery suitably located for use in an emergency.
- .4 For a period of 36 h:
 - .1 one of the fire pumps required by the Rules, Part 17. - Fire Protection - 10.2.2.2;
 - .2 the automatic sprinkler pump, if any; and
 - .3 the emergency bilge pump and all the equipment essential for the operation of electrically powered remote controlled bilge valves.
- .5 For the period of time required in 5.5.6, the steering gear where it is required to be so supplied.
- .6 For a period of half an hour:

- .1 any watertight doors required by SOLAS Ch. II-1/13 to be power-operated together with their indicators and warning signal;
- .2 the emergency arrangements to bring the lift cars to deck level for the escape of persons. The passenger lift cars may be brought to deck level sequentially in an emergency.

19.1.2.2 For ships of restricted area of navigation 3 the period of 36 hours may be reduced to 18 hours and for ships restricted navigation area 4, 5, 6, 7, 8 to 3 hours.

NOTE: For ships for which SOLAS is not applicable, a reduced period of time may be accepted.

19.1.2.3 Continuous supply shall be ensure for 3 hours on Ro/Ro passenger ships the supplementary emergency illumination with own storage-battery luminaries, see 19.3.3.

19.1.2.4 Emergency source of electrical power shall be ensure continuous supply from period of one hour for electric operated Low-Location Lighting (LLL-system).

19.1.2.5 Where the emergency source of electrical power is a generator, it shall be:

- .1 driven by a suitable prime mover with an independent supply of fuel, having a flashpoint (closed cup test) of not less than 43 °C;
- .2 started automatically upon failure of the electrical supply from the main source of electrical power and shall be automatically connected to the emergency switchboard; those services referred to in 19.1.2.7 shall then be transferred automatically to the emergency generating set. The automatic starting system and the characteristic of the prime mover shall be such as to permit the emergency generator to carry its full rated load as quickly as is safe and practicable, subject to a maximum of 45 s; and
- .3 provided with a transitional source of emergency electrical power according to 19.1.2.7.

19.1.2.6 Where the emergency source of electrical power is an accumulator battery it shall be capable of:

- .1 carrying the emergency electrical load without recharging while maintaining the voltage of the battery throughout the discharge period within 12% above or below its nominal voltage;
- .2 automatically connecting to the emergency switchboard in the event of failure of the main source of electrical power; and
- .3 immediately supplying at least those services specified in 19.1.2.7.

19.1.2.7 The transitional source of emergency electrical power where required by paragraph 19.1.2.5.3 shall consist of an accumulator battery suitable located for use in an emergency which shall operate without recharging while maintaining the voltage of the battery throughout the discharge period within 12% above or below its nominal voltage and be of sufficient capacity and shall be so arranged as to supply automatically in the event of failure of either the main or the emergency source of electrical power at least the following services, if they depend upon an electrical source for their operation:

- .1 For a period of half an hour:
 - .1 the lighting required by paragraphs 19.1.2.1.1 and 19.1.2.1.2.1;
 - .2 all services required by paragraphs 19.1.2.1.3.1, 19.1.2.1.3.3 and 19.1.2.1.3.4 unless such services have an independent supply for the period specified from an accumulator battery suitably located for use in an emergency.
- .2 Power to operate the watertight doors, as required by SOLAS Ch. II-1/13.7.3.3, but not necessarily all of them simultaneously, unless an independent temporary source of stored energy is provided. Power to the control, indication and alarm circuits as required by SOLAS Ch. II-1/13.7.2 for half an hour.

19.1.2.8 Where the emergency and/or transitional emergency loads are supplied from a battery via an electronic converter the maximum permitted d.c. voltage variations are to be taken as those the load side of the converter or inverter.

Where the d.c. converted into a.c. the maximum variation are not exceed those given in 2.1.