Rules for

Conditions of Classification

Part 1

January 2022

RULES FOR

CONDITIONS OF CLASSIFICATION
JANUARY 2022

PART 1

American Bureau of Shipping
Incorporated by Act of Legislature of
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Foreword *(2018)*

For the 2018 edition, the Classification requirements for specific types of vessels, previously contained in supplements within each individual Rule or Guide, were brought into these *Rules for Conditions of Classification (Part 1)* as new Chapters.

Accordingly, the subject booklet, *Rules for Conditions of Classification (Part 1)*, is to be considered, for example, as being applicable to and comprising a "Part" of the following ABS Rules and Guides:

- *Rules for Building and Classing Marine Vessels (Marine Vessel Rules)* – (Chapters 1, 2 and 3)
- *Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (River Rules)* – (Chapters 1 and 4)
- *Rules for Building and Classing Steel Barges (Barge Rules)* – (Chapters 1 and 5)
- *Rules for Building and Classing Steel Floating Dry Docks (Floating Dry Dock Rules)* – (Chapters 1 and 6)
- *Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities (Underwater Vehicles Rules)* – (Chapters 1 and 7)
- *Rules for Building and Classing Bulk Carriers for Service on the Great Lakes (Great Lakes Bulk Carrier Rules)* – (Chapters 1 and 8)
- *Guide for Building and Classing Yachts (Yacht Guide)* – (Chapters 1 and 9)
- *Guide for Vessels Intended to Carry Compressed Natural Gases in Bulk (CNG Guide)* – (Chapters 1 and 10)
- *Guide for Building and Classing International Naval Ships (INSG Guide)* – (Chapters 1 and 11)

Separate Part 1 booklets are applicable to offshore units and light warships and high-speed craft. These are titled *Rules for Conditions of Classification – Offshore Units and Structures (Part 1)* and *Rules for Conditions of Classification – Light and High-Speed Craft (Part 1)*.

PART 1

Conditions of Classification

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CHAPTER 1
Scope and Conditions of Classification

SECTION 1
Classification

1 Process *(1 November 2004)*

The Classification process consists of

a) The development of Rules, Guides, standards and other criteria for the design and construction of marine vessels and structures, for materials, equipment and machinery,

b) The review of design and survey during and after construction to verify compliance with such Rules, Guides, standards or other criteria,

c) The assignment and registration of class when such compliance has been verified, and

d) The issuance of a renewable Classification certificate with annual endorsements valid for five years.

The Rules, Guides, and standards are, in general, developed by the International Association of Classification Societies and by ABS staff, and passed upon by committees made up of naval architects, marine engineers, shipbuilders, engine builders, steel makers and by other technical, operating, and scientific personnel associated with the worldwide maritime industry. Theoretical research and development, established engineering disciplines, as well as satisfactory service experience are utilized in their development and promulgation. ABS and its committees can act only upon such theoretical and practical considerations in developing Rules, Guides, and standards.

Surveyors apply normally accepted examination and testing standards to those items specified for each survey by the Rules. Construction procedures, safety procedures and construction supervision remain the responsibility of the shipyard, ship repairer, manufacturer, Owner or other client.

For classification, vessels are to comply with both the hull and the machinery requirements of the Rules and Guides.

3 Certificates and Reports *(1 January 1996)*

3.1

Plan review, and surveys during and after construction are conducted by ABS to verify to itself and its committees that a vessel, structure, item of material, equipment or machinery is in compliance with the Rules, Guides, standards or other criteria of ABS and to the satisfaction of the attending Surveyor. All

reports and certificates are issued solely for the use of ABS, its committees, its clients and other authorized entities.

3.3

ABS will release information from reports and certificates to the Port State to assist in rectification of deficiencies during port state control intervention. Such information includes text of conditions of classification, survey due dates, and certificate expiration dates. The Owner will be advised of any request and/or release of information

3.5

ABS will release certain information to the vessel's hull underwriters and P & I clubs for underwriting purposes. Such information includes text of overdue conditions of classification, survey due dates, and certificate expiration dates. The Owners will be advised of any request and/or release of information. In the case of overdue conditions of classification, the Owners will be given the opportunity to verify the accuracy of the information prior to its release.

3.7 ***(2002)***

ABS may release vessel specific information related to the classification and statutory certification status. This information may be published on the ABS website or by other media and may include the vessel's classification, any operating restrictions noted in ABS's *Record*, the names, dates and locations of all surveys performed by ABS, the expiration date of all class and statutory certificates issued by ABS, survey due dates, the text of conditions of classification, transfers, suspensions, withdrawals, cancellations and reinstatements of class, and other related information as may be required.

5 Representations as to Classification *(1 August 2011)*

Classification is a representation by ABS as to the compliance with applicable requirements of the Rules, Guides, and standards. The Rules, Guides, and standards of the American Bureau of Shipping are not meant as a substitute for the independent judgment of professional designers, naval architects, marine engineers, Owners, operators, masters, and crew, nor as a substitute for the quality control procedures of shipbuilders, engine builders, steel makers, suppliers, manufacturers, and sellers of marine vessels, materials, machinery, or equipment. ABS, being a technical society, can only act through Surveyors or others who are believed by it to be knowledgeable and competent.

ABS represents solely to the vessel Owner or other client of ABS that when assigning class, it will use due diligence in the development of Rules, Guides, and standards, and in using normally applied testing standards, procedures, and techniques as called for by the Rules, Guides, standards, or other criteria of ABS for the purpose of assigning and maintaining class. ABS further represents to the vessel Owner or other client of ABS that its certificates and reports evidence compliance only with one or more of the Rules, Guides, standards, or other criteria of ABS in accordance with the terms of such certificate or report. Under no circumstances whatsoever are these representations to be deemed to relate to any third party.

The user of this document is responsible for ensuring compliance with all applicable laws, regulations, and other governmental directives and orders related to a vessel, its machinery and equipment, or their operation. Nothing contained in any Rule, Guide, standard, certificate, or report issued by ABS shall be deemed to relieve any other entity of its duty or responsibility to comply with all applicable laws, including those related to the environment.

7 Scope of Classification *(1 March 2017)*

Nothing contained in any certificate or report is to be deemed to relieve any designer, builder, Owner, manufacturer, seller, supplier, repairer, operator, insurer, or other entity or person of any duty to inspect or any other duty or warranty express or implied. Any certificate or report evidences only that at the time of

survey the vessel, structure, item of material, equipment or machinery, or any other item covered by a certificate or report complied with one or more of the Rules, Guides, standards, or other criteria of the American Bureau of Shipping and is issued solely for the use of ABS, its committees, its clients, or other authorized entities. Nothing contained in any certificate, report, plan or document review or approval is to be deemed to be in any way a representation or statement beyond those contained in 1-1-1/5. ABS is not an insurer or guarantor of the integrity or safety of a vessel or of any of its equipment or machinery. The validity, applicability, and interpretation of any certificate, report, plan or document review or approval are governed by the Rules, Guides, and standards of the American Bureau of Shipping who shall remain the sole judge thereof. ABS is not responsible for the consequences arising from the use by other parties of the Rules, Guides, standards, or other criteria of the American Bureau of Shipping, without review, plan approval, and survey by ABS.

The term “approved” shall be interpreted to mean that the plans, reports, or documents have been reviewed for compliance with one or more of the Rules, Guides, standards, or other criteria acceptable to ABS.

The Rules and Guides are published with the understanding that responsibility for stability and trim, for reasonable handling and loading, as well as for avoidance of distributions of weight which are likely to set up abnormally severe stresses in vessels does not rest upon ABS.

PART 1

CHAPTER 1

Scope and Conditions of Classification

SECTION 2

Suspension and Cancellation of Classification *(1998)*

1 General *(2021)*

The continuance of the Classification of any vessel is conditional upon the Rule or Guide requirements for periodical, damage, and other surveys being duly carried out. The Committee reserves the right to reconsider, withhold, suspend, or cancel the class of any vessel or any part of the machinery for noncompliance with the Rules or Guides, for defects or damages which are not reported to ABS, for defects reported by the Surveyors which have not been rectified in accordance with their recommendations, or for nonpayment of fees which are due on account of Classification, Statutory, or Cargo Gear Surveys. Suspension or cancellation of class may take effect immediately or after a specified period of time.

1.1 *(2004)*

ABS reserves the right to perform unscheduled surveys of the hull, equipment, or machinery when ABS has reasonable cause to believe that the Rule requirements for periodical, damage and other surveys are not being complied with.

3 Notice of Surveys

It is the responsibility of the Owner to ensure that all surveys necessary for the maintenance of class are carried out at the proper time. ABS will notify an Owner of upcoming surveys and conditions of class. This may be done by means of a letter or other communication. The non-receipt of such notice, however, does not absolve the Owner from his responsibility to comply with survey requirements for maintenance of class.

5 Special Notations

If the survey requirements related to maintenance of special notations are not carried out as required, the suspension or cancellation may be limited to those special notations only.

7 Suspension of Class

7.1 *(2021)*

Suspension of classification is a withdrawal of all representations by ABS as to a vessel.

7.3 *(2021)*

Class may be suspended and the Certificate of Classification will become invalid in any of the following circumstances:

i) Upon the owner or operator relinquishing control of the vessel as a result of a casualty or under threat, duress, or government order,

ii) Upon failure to submit any modification, damage, failure, deterioration, or repairs for examination upon the first opportunity,

iii) If proposed repairs, as referred to in 7-1-1/7 of the ABS *Rules for Survey After Construction (Part 7)*, have not been submitted to ABS and agreed upon prior to commencement,

iv) For any use, operation, loading condition, or other application of any vessel for which it has not been approved and which affects or may affect classification or the structural integrity, quality, or fitness for a particular use or service.

7.5 *(2021)*

Class will be suspended and the Certificate of Classification will become invalid in any of the following circumstances:

i) If Continuous Survey items which are due or overdue at the time of Annual Survey are not completed and no extension has been granted,

ii) If the other surveys required for maintenance of class, other than Annual, Intermediate or Special Periodical Surveys, are not carried out by the due date and no Rule allowed extension has been granted,

iii) If conditions of class issued by the Surveyor are not carried out by their due dates and no extension has been granted,

iv) If any damage, failure or deterioration repair has not been completed as recommended.

v) Failure to permit the unscheduled surveys referred to in 1-1-2/1.1 above

7.7

Class is automatically suspended and the Certificate of Classification is invalid in any of the following circumstances:

i) *(1 July 2005)* If the Annual Survey is not completed by the date which is three (3) months after the due date, unless the vessel is under attendance for completion of the Annual Survey, or

ii) *(1 July 2005)* If the Intermediate Survey is not completed by the date which is three (3) months after the due date of the third Annual Survey of the five (5) year periodic survey cycle, unless the vessel is under attendance for completion of the Intermediate Survey, or

iii) If the Special Periodical Survey is not completed by the due date, unless the vessel is under attendance for completion prior to resuming trading.

(1 July 2005) Under "exceptional circumstances" (limited to such cases as unavailability of drydocking facilities; unavailability of repair facilities; unavailability of essential materials, equipment or spare parts; or delays incurred by action taken to avoid severe weather conditions), consideration may be given for an extension of the Special Periodical Survey not exceeding three (3) months, provided the vessel is attended and the attending Surveyor(s) so recommend(s) after the following has been carried out:

- Annual Survey; and
- Re-examination of conditions of class; and
- Progression of the Special Periodical Survey as far as practicable; and

- In the case where drydocking is due prior to the end of the class extension, an underwater examination is to be carried out by an approved diving company. An underwater examination by an approved company may be dispensed with in the case of extension of Drydocking Survey not exceeding 36 months interval provided the vessel is without conditions of class regarding underwater parts.

(1 July 2005) If the vessel is at sea on the Special Periodical Survey due date, consideration may be given for an extension of the Special Periodical Survey provided there is documented agreement to an extension prior to the due date, positive arrangements have been made for a Surveyor to attend the vessel at the first port of call, and ABS is satisfied there is technical justification for an extension. Such an extension shall be granted only until arrival at the first port of call after the due date. However, if owing to "exceptional circumstances" the Special Periodical Survey cannot be completed at the first port of call, the Rule above for an extension of the Special Periodical Survey may be followed, but the total period of extension shall in no case be longer than three (3) months after the original due date of the Special Periodical Survey.

7.9 *(1 July 2005)*

When a vessel is intended for a demolition voyage with any periodical survey overdue, the vessel's class suspension may be held in abeyance, and consideration may be given to allow the vessel to proceed on a single direct ballast voyage from the lay-up or final discharge port to the demolition yard. In such cases, a short term Class Certificate with conditions for the voyage noted may be issued provided the attending Surveyor finds the vessel in satisfactory condition to proceed for the intended voyage.

7.11 *(1 July 2005)*

If due to circumstances reasonably beyond the Owner's or ABS's control (limited to such cases as damage to the vessel; unforeseen inability of ABS to attend the vessel due to the governmental restrictions on right of access or movement of personnel; unforeseeable delays in port or inability to discharge cargo due to unusually lengthy periods of severe weather, strikes, civil strife, acts of war, or other cases of force majeure), the ship is not in a port where the overdue surveys can be completed at the expiry of the periods allowed above, ABS may allow the vessel to sail, in class, directly to an agreed discharge port and, if necessary, hence, in ballast, to an agreed port at which the survey will be completed, provided that ABS:

i) Examines the vessel's records; and

ii) Carries out the due and/or overdue surveys and examination of conditions of class at the first port of call when there is an unforeseen inability of ABS to attend the vessel in the present port, and

iii) Has satisfied itself that the vessel is in a condition to sail for one trip to a discharge port and subsequent ballast voyage to a repair facility if necessary. (Where there is unforeseen inability of ABS to attend the vessel in the present port, the master is to confirm that his ship is in condition to sail to the nearest port of call.)

If class has already been automatically suspended in such cases, it may be reinstated subject to the conditions presented in this Paragraph.

7.13 *(1 August 2020)*

When a vessel is intended for a single voyage from laid-up position to a repair yard or another place of lay-up with any periodical survey overdue, the vessel's class suspension may be held in abeyance and consideration may be given to allow the vessel to proceed on a single direct ballast voyage from the site of lay up to a repair yard or another place of lay-up, upon agreement with the Flag Administration, provided ABS finds the vessel in satisfactory condition after surveys, the extent of which are to be based on surveys overdue and duration of lay-up. A short term Class Certificate with conditions for the intended voyage may be issued. This is not applicable to vessels whose class was already suspended prior to being laid-up.

9 Lifting of Suspension

9.1 *(1 July 2005)*

Class will be reinstated after suspension for overdue surveys upon satisfactory completion of the overdue surveys. Such surveys will be credited as of the original due date. However, the vessel is removed from class from the date of suspension until the date class is reinstated.

9.3 *(1 July 2005)*

Class will be reinstated after suspension for overdue conditions of class upon satisfactory completion of the overdue conditions of class. However, the vessel is removed from class from the date of suspension until the date class is reinstated.

9.5

Class will be reinstated after suspension for overdue Continuous Survey items upon satisfactory completion of the overdue items.

11 Cancellation of Class

11.1

If the circumstances leading to suspension of class are not corrected within the time specified, the vessel's class will be canceled.

11.3

A vessel's class is canceled immediately when a vessel proceeds to sea without having completed conditions of class which were required to be dealt with before leaving port.

11.5

When class has been suspended for a period of three (3) months due to overdue Annual, Intermediate, Special Periodical or other surveys required for maintenance of class; overdue Continuous Survey items; or overdue conditions of class, class will be canceled. A longer suspension period may be granted for vessels which are either laid up, awaiting disposition of a casualty, or under attendance for reinstatement.

11.7 *(1 August 2016)*

Any attempt by the Client to subcontract, assign, delegate, sublet, or transfer the Classification agreement without prior written notice to ABS shall, at ABS' option, render the Classification agreement null and void. ABS may deem the Classification of any vessel cancelled upon the vessel's sale or transfer without prior written notice to ABS.

11.9 *(1 August 2016)*

For vessels sold or transferred during layup, the new Owners are to advise ABS in writing within 90 days, irrespective of any written notification provided by previous Owners as noted in 1-1-2/11.7, of their request for continued maintenance of the vessel's Classification under the new Ownership. Failure to submit the request to continue Classification will result in Class cancellation.

13 Alternative Procedures for Certain Types of Vessels *(2021)*

Alternatives to 1-1-2/7.7 procedures for automatic suspension of class and 1-1-2/11.5 procedures for cancellation of class may be applied to military vessels, commercial vessels owned or chartered by governments which are utilized in support of military operations or service, laid-up vessels, or fishing vessels.

PART 1

CHAPTER 1
Scope and Conditions of Classification

SECTION 3
Classification Symbols and Notations

Note:

A listing of Classification Symbols and Notations available to the Owners of vessels may be viewed and downloaded from the ABS website "http://www.eagle.org". This Section introduces the fundamental classification symbols and notations. Additional and/or optional classification symbols and notations are described in the Rules and Guides governing the specific vessel or service.

1 Unrestricted Service *(1 August 2011)*

Vessels which have been built to the satisfaction of the ABS Surveyors to the applicable requirements of the Rules, Guide, or to their equivalent, where approved by the Committee for unrestricted service at the assigned freeboards, may be classed and distinguished in the *Record* by the symbols ✠**A1** indicating compliance with the hull requirements of the Rules and for self-propelled vessels ✠**AMS** indicating compliance with the machinery requirements of the Rules.

3 Special Rules

Vessels which have been built to the satisfaction of the ABS Surveyors to the requirements as contained in the Rules for special types of vessels and which are approved by the Committee for unrestricted ocean service at the assigned freeboards, will be classed and distinguished in the *Record* by the symbols ✠**A1** followed by the appropriate notation, such as **Oil Carrier**, **Ore Carrier**, **Bulk Carrier**, **Ore or Oil Carrier**, **Oil or Bulk/Ore (OBO) Carrier**, **Liquefied Gas Carrier**, **Chemical Carrier**, **Passenger Vessel**, **Vehicle Carrier**, **Container Carrier, Towing Vessel**, **Refrigerated Cargo Carrier**.

(See the "List of ABS Notations and Symbols" on the ABS website "www.eagle.org/rules/downloads.html" for more information on the notations.)

5 Special Purpose Vessels

Vessels of special design, intended primarily for ferry service, for dredging, for fishing, etc., which have been built to the satisfaction of the ABS Surveyors to arrangements and scantlings approved for the particular purpose, where approved by the Committee for a particular service at the assigned freeboards, will be classed and distinguished in the *Record* by the symbols ✠**A1** followed by a notation of the trade for which special modifications to the Rules have been approved.

7 Geographical Limitations

Vessels which have been built to the satisfaction of the ABS Surveyors to special modified requirements for a limited service, where approved by the Committee for that particular service, will be classed and distinguished in the *Record* by the symbols and notations as described in 1-1-3/1, 1-1-3/3, and 1-1-3/5,but the symbols and notations will either be followed by or have included in them the appropriate geographical service limitation (e.g., **Gulf of Mexico**).

9 Vessels Not Built Under Survey *(1 May 2019)*

Vessels built and classed under survey of a recognized society and submitted for classification, will be subjected to a special classification survey. Where found satisfactory and thereafter approved by the Committee, they will be classed and distinguished in the *Record* by an underlined Maltese Cross ✠ and the symbols and special notations as described in 1-1-3/1 to 1-1-3/7 and the following Chapters. For non-recognized class societies, the symbol ✠ will be omitted.

11 Equipment Symbol *(1 July 2019)*

The symbol Ⓔ placed after the symbols of classification, thus: ✠**A1** Ⓔ, will signify that the equipment of anchors and chain cables of the vessel is in compliance with the requirements of the Rules or with requirements corresponding to the service limitation noted in the vessel's classification, which have been specially approved for the particular service.

For Offshore Support Vessels and steel vessels under 90 meters (295 feet) in length, which have not been built under ABS survey, the optional equipment notation Ⓔ**-(R)** may be assigned to the vessel's equipment, provided the existing anchors, chains and anchor windlass are confirmed certified by another recognized Classification Society. The available manufacturer's and classification test certificates and plans associated with the anchors, chains and windlass, as applicable, are to be submitted to ABS for reference and verification of Equipment Numeral.

13 ✠ AMS Notation *(29 November 2007)*

Machinery, and boilers if installed, which have been constructed and installed to the satisfaction of the ABS Surveyors to the full requirements of the Rules, when found satisfactory after trial and approved by the Committee, will be classed and distinguished in the *Record* by the notation ✠**AMS**. This notation is mandatory for classification of self-propelled commercial vessels built under ABS survey, classed and distinguished in the *Record* by the symbol ✠**A1**.

15 AMS Notation *(1 February 2011)*

Machinery, and boilers if installed on self-propelled vessels, which have not been constructed and installed under ABS survey, but which are submitted for classification, will be subjected to a special classification survey. Where found satisfactory and thereafter approved by the Committee, they will be classed and distinguished in the *Record* by the notation **AMS**. The symbol ✠ signifying survey during construction will be omitted.

17 Centralized or Automatic Control Systems

Where, in addition to the individual unit controls, it is proposed to provide remote, centralized, or automatic control systems for propulsion units, essential auxiliaries, or for cargo handling, relevant data is to be submitted to permit the assessment of the effect of such systems on the safety of the vessel. All controls necessary for the safe operation of the vessel are to be proved to the Surveyor's satisfaction. The automatic and remote-control systems are to be in accordance with the applicable requirements of the relevant Rules or Guide.

19 Dynamic Loading Approach

Vessels which have been built to plans reviewed in accordance with an acceptable procedure and criteria for calculating and evaluating the behavior of hull structures under dynamic loading conditions, in addition to full compliance with other requirements of the Rules, will be classed and distinguished in the *Record* by the notation **SH-DLA** placed after the appropriate hull classification notation. See also 3-1-2/5.3 of the *Marine Vessel Rules*. The application of the dynamic loading approach is optional.

21 Spectral Fatigue Analysis *(2003)*

Where a spectral fatigue analysis is performed satisfactorily in accordance with an acceptable procedure and criteria, and the vessel is built in accordance with plans approved on the basis of the results of such analysis, the vessel will be distinguished in the *Record* by the notation **SFA (year)**. The notation, **SFA (year)**, denotes that the designated fatigue life value is equal to 20 years or greater. The **(year)** refers to the designated fatigue life equal to 20 years or more (in 5-year increments) as specified by the applicant.

23 Common Structural Rules for Tankers and Bulk Carriers *(1 April 2006)*

Vessels designed and built to the requirements in Part 5A "General Hull Requirements (IACS CSR Part 1)", Part 5B "Ship Types (IACS CSR Part 2)", and 5C-A1-2 "Guide for ABS Construction Monitoring Program" of the *Marine Vessel Rules*, will be identified in the *Record* by the notation **CSR, AB-CM**.

25 SafeHull Criteria *(1 April 2006)*

Vessels 150 m or more in length whose designs are not within the scope of the Common Structural Rules referred to in 1-1-3/23, and that are designed and built to the requirements in Part 5C, Chapter 1, and Part 5C, Chapter 3 of the *Marine Vessel Rules*, and vessels designed and built to the requirements in Part 5C, Chapter 5 of the *Marine Vessel Rules* for container carriers [$L \geq 130$ m (427 feet)] will be identified in the *Record* by the notation **SH, SHCM**. See also 5C-A1-1 "SafeHull Construction Monitoring Program" of the *Marine Vessel Rules*.

27 Ice Classes *(1998)*

Vessels to be distinguished in the *Record* by the notation **Ice Class** are to meet the requirements in Part 6, Chapter 1 of the *Marine Vessel Rules* applicable to the designated ice class.

29 PORT Notation *(1999)*

Where requested by the Owner, control and monitoring installations which are found to comply with the requirements in the ABS *Guide for Automatic and Remote Control and Monitoring Systems for Vessels in Port* and which have been installed and tested under survey by the ABS Surveyor will be assigned and distinguished in the *Record* with the class notation **PORT**.

31 Domestic Service Notation *(2017)*

Where requested by the Owner, vessels designed and built in compliance with 5C-A1-3 of the ABS *Rules for Building and Classing Marine Vessels*, and intended solely for restricted service in domestic waters may be assigned and distinguished in the *Record* with the class notation **(Operational Area) Domestic Service**. Example – **⊠A1, U.S. Domestic Service, Ⓔ, ⊠AMS**.

PART 1

CHAPTER 1
Scope and Conditions of Classification

SECTION 4
Rules for Classification

1 Application of Rules *(2018)*

1.1 General

The requirements of the following Rules and Guides are applicable to those features that are permanent in nature and can be verified by plan review, calculation, physical survey or other appropriate means. Any statement in the Rules regarding other features is to be considered as guidance to the designer, builder, manufacturer, Owner, operator or other client.

Where reference is made herein to the Rules or Guides, the latest edition of those Rules or Guides is intended.

- *Rules for Building and Classing Marine Vessels*
- *Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways*
- *Rules for Building and Classing Steel Barges*
- *Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities*
- *Rules for Building and Classing Steel Floating Dry Docks*
- *Rules for Building and Classing Bulk Carriers for Service on the Great Lakes*
- *Guide for Building and Classing Yachts*
- *Guide for Vessels Intended to Carry Compressed Natural Gases in Bulk*
- *Guide for Building and Classing International Naval Ships*

1.3 Application *(2009)*

The application of the Rules and Guides is, in general, based on the contract date for construction between the shipbuilder and the prospective Owner. (e.g., Rules which became effective on 1 July 2004 are not applicable to a vessel for which the contract for construction was signed on 30 June 2004.) See also 1-1-4/3. Special consideration may be given to the application of the Rules and to the implementation of Rule changes to military vessels and vessels owned by Governments for non-commercial purposes.

The requirements in these Rules are the common requirements for conditions of classification of vessels. Any unique requirements for a specific type of vessel are specified in the supplement to these Rules in

each of the following Chapters. These Rules are to be used together with the applicable supplemental Rules for the specific type of unit or structure.

3 Effective Date of Rule Change

3.1 Effective Date *(1 May 2017)*

Changes to the Rules are to become effective on the date specified by ABS. In general, the effective date is not less than six months from the date on which the ABS Rules Committee approves them. However, ABS may bring into force individual changes before that date if necessary or appropriate. The effective date of changes to the Rules can be found in the Introduction to the ABS publication "Notices and General Information" that is published with the respective Rules or Guides.

Guides and subsequent changes to Guides are to become effective on the date specified by ABS.

3.3 Implementation of Rule Changes

3.3.1 General *(2005)*

In general, until the effective date, plan approval for designs will follow prior practice unless review under the latest Rules or Guide is specifically requested by the party signatory to the application for classification.

3.3.2 Date of Contract for Construction *(1 February 2007)*

The date of “contract for construction” of a vessel is the date on which the contract to build the vessel is signed between the prospective Owner and the shipbuilder. The date and the construction numbers (i.e., hull numbers) of all the vessels included in the contract are required to be indicated on the form, “Application of Request for Classification”.

If the signed contract for construction is amended to change the ship type, the date of “contract for construction” of this modified vessel, or vessels, is the date on which the revised contract or a new contract is signed between the Owner, or Owners, and the shipbuilder.

3.3.3 Series of Vessels and Optional Vessels *(21 June 2007)*

The date of “contract for construction” as defined in 1-1-4/3.3.2 of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective Owner and the shipbuilder.

Vessels built under a single contract for construction are considered a “series of vessels” if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

i) Such alterations do not affect matters related to classification, or

ii) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective Owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to ABS for approval.

The “optional vessels” will be considered part of the same series of vessels if the option is exercised not later than one year after the contract to build the series was signed.

3.3.4 Additional Optional Vessels *(2005)*

If a contract for construction is later amended to include additional vessels or additional options, the date of “contract for construction” for such vessels is the date on which the amendment to the

contract is signed between the prospective Owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which 1-1-4/3.3.2 and 1-1-4/3.3.3 above apply.

5 Novel Features

Vessels which contain novel features of design in respect of the hull, machinery, or equipment to which the provisions of the Rules or Guide are not directly applicable may be classed, when approved by the Committee, on the basis that the Rules or Guide, insofar as applicable, has been complied with and that special consideration has been given to the novel features based on the best information available at the time.

7 Alternatives

7.1 General

The Committee is at all times ready to consider alternative arrangements and scantlings which can be shown, through either satisfactory service experience or a systematic analysis based on sound engineering principles, to meet the overall safety, and strength standards of the Rules or Guide.

7.3 National Regulations

The Committee will consider special arrangements or details of hull, equipment or machinery which can be shown to comply with standards recognized in the country in which the vessel is registered or built, provided they are not less effective.

7.5 Other Rules *(1 July 2021)*

The Committee will consider hull, equipment or machinery built to the satisfaction of the ABS Surveyors in accordance with the plans that have been approved to the Rules of another recognized classification society with verification of compliance by ABS. A record comment will be entered in the *Record* indicating that classification has incorporated the provisions of this Paragraph. In addition, for a container carrier [$L \geq 130$ m (427 ft)], a liquefied gas carrier with membrane tanks, a liquefied gas carrier with independent tanks, and a tanker [$L \geq 150$ m (492 ft)] and a bulk carrier [$L \geq 150$ m (492 ft)] to which the common structural rules are not applicable, the class notation **SHR**, will be entered in the *Record*. The notation, **SHR**, denotes that the vessel's scantlings within 0.4L amidships are reviewed based on the requirements in Section 5C-5-4 for container carriers and Section 5C-12-4 for liquefied gas carriers with membrane tanks, Section 5 of the ABS *Guide for Building and Classing Liquefied Gas Carriers with Independent Tanks* for liquefied gas carriers with independent tanks, and Section 5C-1-4 for tankers,and Section 5C-3-4 for bulk carriers, of the *Marine Vessel Rules* as applicable. Submission of plans is to be in accordance with Section 1-1-7.

7.6 Application of Common Structural Rules for Bulk Carriers and Oil Tankers *(1 July 2012)*

The Committee will consider the hull of oil carriers and bulk carriers defined under the *Common Structural Rules*, built to the satisfaction of the Surveyors of ABS in accordance with the plans that have been approved to the Rules of another recognized classification society with verification of compliance by ABS. A record comment will be entered in the *Record* indicating that classification has incorporated the provisions of this Paragraph.

The application of **AB-CM** notation is specially considered.

7.7 ABS Type Approval Program *(2003)*

7.7.1 Type Approval

Products that can be consistently manufactured to the same design and specification may be Type Approved under the ABS Type Approval Program. The ABS Type Approval Program is a voluntary option for the demonstration of compliance of a product with the Rules or other

recognized standards. It may be applied at the request of the designer or manufacturer. The ABS Type Approval Program generally covers Product Type Approval (1-1-4/7.7.3), but is also applicable for a more expeditious procedure towards Unit Certification, as specified in 1-1-4/7.7.2.

7.7.2 Unit Certification

Unit Certification is a review of individual materials, components, products and systems for compliance with ABS Rules, Guides or other recognized standards. This allows these items to be placed on a vessel, marine structure or system to become eligible for classification. Certification is a "one-time" review. The process is:

i) A technical evaluation of drawings or prototype tests of a material, component, product or system for compliance with the ABS Rules, Guides or other recognized standards,

ii) A survey during manufacture for compliance with the ABS Rules, Guides or other recognized standards and results of the technical evaluation,

iii) Alternatively, a Confirmation of Type Approval (see below) will expedite the requirements of 1-1-4/7.7.2.i and 1-1-4/7.7.2.ii above,

iv) Products found in compliance are issued "Individual Unit Certification",

v) There is no requirement for subsequent reviews or surveys.

7.7.3 Product Type Approval

Product Type Approval is a voluntary program used to prove eligibility for certification by demonstrating a product manufacturer's conformance to a specific standard or specification. Manufacturers who can demonstrate the ability to produce consistent products in compliance with these standards are issued "Confirmations of Type Approval" (see 1-1-A3/5.3.4). The Confirmation of Type Approval is neither an alternative to nor an equivalent of an Individual Unit Certificate. In order to remain valid, the Confirmation of Type Approval requires routine audits of the manufacturer and continued compliance of the product with existing or new specifications.

7.7.4 Approval on Behalf of Administrations

ABS has also been authorized and/or notified to type approve certain equipment on behalf of Administrations. The list of authorizations and notifications is maintained at each ABS Technical Office.

7.7.5 Applicable uses of Type Approved Products *(1 August 2011)*

i) When a product is at a stage suitable for testing and/or for use in a classed vessel, and unit certification is required, the manufacturer is to present the product to an attending Surveyor for witnessing of all required Rule testing. Unless specified in the Design Assessment, technical evaluation would not normally be required.

ii) When a product is at a stage suitable for use in a classed vessel, and unit certification is not required, the product may be installed, to the satisfaction of the attending Surveyor, without the need for technical evaluation.

iii) Where a component or product has been manufactured under an ABS Type Approved manufacturing process but unit certification has not been obtained at the place of manufacture, and unit certification is required or desired at a subsequent assembly stage, consideration will be given to unit certification provided:

a) The ABS Type Approved manufacturer provides a declaration of conformity stating compliance with the Product Design assessment, and

b) The declaration of conformity is accompanied by and confirms the accuracy of all reports for material and factory acceptance tests that would have been witnessed by a Surveyor if a Surveyor had attended during manufacture.

Final acceptance and testing of the components and products will be to the satisfaction of the attending Surveyor and will be at least as stringent as the factory nondestructive acceptance test required for the original manufacture of such component or product.

7.7.6 Definitions

Audit. A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve the stated objectives.

General Audit. An audit that addresses the general operation of a site, and addresses applicable sections of the Quality and Environmental System Manual, quality and environmental system procedures, and operating procedures and process instructions.

Surveillance Audit. An audit that addresses specific areas within the operation at a site, and addresses selected sections of the Quality and Environmental System Manual, quality and environmental system procedures, and operating procedures and process instructions**.**

Audit Checklist. A listing of specific items within a given area that are to be audited.

Audit Report/Checklist. A combination of audit report and associated checklist.

Component. Parts/members of a product or system formed from material.

Finding. A statement of fact supported by objective evidence about a process whose performance characteristics meet the definition of non-conformance or observation.

Manufacturing Process. The process is the steps that one takes to produce (manufacture) a product.

Manufacturing System. The system is bigger than the manufacturing process, since it considers all of the factors that affect the process. This includes control of the process inputs, process controlling factors (such as competency of personnel, procedures, facilities and equipment, training, etc.) process outputs and measurements of quality, process and product for continual improvement, etc.

Material. Goods used that will require further forming or manufacturing before becoming a new component or product.

Non-conformance. Non-fulfillment of a specified requirement.

Observation. A detected weakness that, if not corrected, may result in the degradation of product or service quality or potential negative impact on the environment.

Original Equipment Manufacturer (OEM). The OEM is the person or legal entity that has the legal or patent rights to produce the material, component, product or system.

Product. Result of the manufacturing process.

Production Testing. This is the destructive and nondestructive testing of the materials and components used in the manufacture of a product and its final testing that is recorded in Unit Certification. The waiving of witnessed testing during production testing may only be allowed as defined in 1-1-A3/3 “Limitations” and 1-1-A3/5.5 “Product Quality Assurance Certification (PQA) Tier 4”.

Prototype Testing. This is the destructive and nondestructive testing of the materials and components presented for evaluation of the original design of a product. If a Surveyor’s witness is required, this may not be waived under any section of the Rules, unless it is done by a recognized third party.

Recognized Third Party. Is a member of the International Association of Classification Societies, a Flag Administration, a Nationally Certified testing Laboratories and others who may be presented to ABS for special consideration.

Type Testing. This is the destructive and nondestructive testing of the materials and components of the first article of a product manufactured. If a Surveyor's witness is required, this may not be waived under any section of the Rules.

7.7.7 The Terms and Conditions for use of ABS Type Approved Product Logo *(1 August 2011)*

When a manufacturer's product has received a Product Design Assessment (PDA), the manufacturer is eligible to use the "Design Assessed" logo.

When a manufacturer has a PDA and has completed a satisfactory Manufacturing Assessment (MA), the product is then eligible for a Confirmation of Type Approval and the manufacturer may use the Type Approved Product logo.

When a product is eligible for a Product Design Assessment (1-1-A3/5.1) or a Confirmation of Type Approval (1-1-A3/5.3.4), the Type Approved Product Logos may be used with the understanding that they are copyrighted and use must be controlled as follows:

i) Both logos are not to be used at the same time. The Type Approved Product logo takes precedence and is to be used whenever the manufacturer has a valid PDA + MA. Otherwise, in the absence of an MA, only the Design Assessed logo may be used when the manufacturer has a valid PDA.

ii) Any advertisement or other use of the logo is to be presented to the Manager of ABS Programs for review prior to use.

iii) The logo may only be used on correspondence, advertising and promotional material and must not be used except in connection with those goods or services described in the scope and conditions of the Product Design Assessment Certificate.

iv) The logo may be used only on those materials (i.e., Internet site, letterhead, marketing literature, advertising, invoice stock forms, packaging, etc.) relating to the particular facility and process/product lines included within the Confirmation of Type Approval.

v) The logo may not, under any circumstances, be used directly on or closely associated with products in such a way as to imply that the products themselves are "Unit-certified" by ABS.

vi) If used with other logos, ABS may ask that the manufacturer discontinue any use of other logos that are unacceptable to ABS and any form of statement that, in the opinion of ABS, might be misleading.

vii) Upon the termination of certification, for whatever reason, the manufacturer must undertake to immediately discontinue all use of the logo and to destroy all stocks of material on which they appear.

viii) When advertising the product as ABS Type Approved, the manufacturer's name, if different from the parent company, is to be used in conjunction with this logo. Any use should be specific to the process/product line covered and not represented as a blanket approval of the company.

ix) The logo may be scaled uniformly to any size necessary. The color of the logo shall be either black or blue (reflex blue or PMS 294 blue).

x) Logos are available by e-mail from absta-programs@eagle.org.

xi) See the ABS Design Assessed and Type Approved Product logos, as follows:

See the *ABS Type Approval Program* in Appendix 1-1-A3.

PART 1

CHAPTER 1
Scope and Conditions of Classification

SECTION 5
Other Regulations

1 General

While the Rules or Guide covers the requirements for the classification of new and existing vessels, the attention of Owners, designers, and builders is directed to the regulations of international, governmental, canal, and other authorities dealing with requirements in addition to or over and above the classification requirements.

3 International Conventions or Codes *(2007)*

Where authorized by the Administration of a country signatory thereto and upon request of the Owners of a classed vessel or one intended to be classed, ABS will survey a new or existing vessel of the applicable size for compliance with the provisions of applicableInternational Conventions and Codes including, the following, and certify thereto in the manner prescribed in the Convention or Code.

- International Convention on Load Lines, 1966, as amended.
- International Convention for the Safety of Life at Sea, 1974, as amended.
- International Convention on Tonnage Measurement of Ships, 1969.
- International Convention for the Prevention of Pollution from Ships, 1973/78, as amended.
- International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk.
- International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
- International Code for Safety for High Speed Craft (2000 HSC Code), 2000.

Where applicable, the IACS Unified Interpretations for each International Convention and Code will be applied as recognized interpretations for plan approval and survey unless specially instructed otherwise by the Administration.

5 Governmental Regulations

5.1 Governmental Authorization *(1 April 2009)*

Where authorized by a government agency and upon request of the Owners of a classed vessel or one intended to be classed, ABS will survey and certify a new or existing vessel for compliance with particular regulations of that government on their behalf.

All work performed on behalf of governments shall be governed by the terms and conditions of these Rules unless the government specifies otherwise.

Owners of a classed vessel are required to notify ABS when a vessel changes flag so that appropriate action can be determined with respect to the scope of ABS's authorization by the new flag Administration.

5.3 European Commission *(31 July 2009)*

Notwithstanding the general duty of confidentiality owed by ABS to its clients in accordance with the ABS Rules, as a condition of classification, all vessels, owners, operators and vessel personnel shall authorize ABS to permit the European Commission and its agents to have access to all vessels, equipment, activities and records for purposes of assessing ABS compliance with Regulation (EC) No. 391/2009 on "Common rules and standards for ship inspection and survey organizations".

7 Carriage of Chemicals and Liquefied Gases by Non-self Propelled Vessels

In general, barges intended for the carriage of dangerous chemicals or liquefied gases in bulk are to comply with the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC-Code) or the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC), as appropriate, or other national standard, as applicable to the non-propelled status of the vessel.

A special certificate attesting to the degree of compliance with the above codes or national standard may be issued upon request.

For manned barges, consideration is to be given for full compliance with the code. In all cases, it is the Owner's responsibility to determine the requirements of Flag Administration and port Administration.

9 International Code of Safety for High Speed Craft, 2000

Where authorized by the Administration of a country signatory to the SOLAS convention and upon request of the Owners of an existing high speed craft or a craft under construction, ABS will review plans and survey the craft for compliance with the provisions of the International Code of Safety for High Speed Craft (2000 HSC Code) and certify thereto in the manner prescribed in the Code. Builders and Owners are advised that Administrations may have special interpretations of the requirements as given in the Code and they should contact the Administration as to this at an early stage in the design.

11 ABS Surveyor's Safety and ABS Safety Manual *(1 May 2012)*

In addition to 1-1-1/1 and 1-1-8/3, it is the responsibility of the shipyard, ship repairer, manufacturer, Owner or their representatives or other client to have established safety procedures in accordance with any governmental and/or local regulatory administrations.

ABS Surveyors will conduct surveys, provided that the client's established safety procedures are not less effective than those contained in the ABS Safety Manual and its associated procedures.

If ABS Surveyors encounter conditions or procedures that may compromise the safety of the Surveyors, they may stop their survey immediately until corrective actions are taken.

Nothing in the latest revision of the ABS Safety Manual (including its associated procedures) is intended to replace or supersede any governmental or local authority's regulations or requirements for the implementation of or content of a premises safety plan, provided such plan is not less effective than the safety policies contained in the ABS Safety Manual.

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Scope and Conditions of Classification

SECTION 6

International Association of Classification Societies (IACS)

1 IACS Audit *(1 April 2010)*

The International Association of Classification Societies (IACS) requires audits of processes followed by all its member societies to assess the degree of compliance with the IACS Quality System Certification Scheme requirements. For this purpose, auditors from IACS and/or an independent Accredited Certification Body (ACB) selected by ABS may accompany ABS personnel at any stage of the classification or statutory work which may necessitate the auditors having access to the vessel or access to the premises of the manufacturer or shipbuilder.

In such instances, prior authorization for the auditor's access will be sought by the local ABS office.

3 Early Warning System *(1 July 2010)*

Notwithstanding the general duty of confidentiality owed by ABS to its clients in accordance with the ABS Rules, ABS clients hereby accept that ABS will participate in the Early Warning System which requires each IACS Member and Associate to provide the involved Classification Societies and other relevant parties with relevant technical information on serious hull structural and engineering systems failures, as defined in the Early Warning System, but not including any drawings relating to the ship which may be the specific property of another party, to enable such useful information to be shared and utilized to facilitate the proper working of the Early Warning System. ABS will provide its client with written details of such information upon sending the same to the involved class societies and other relevant parties.

1 Hull Plans *(2017)*

Plans showing the scantlings, arrangements, and details of the principal parts of the hull structure of each vessel to be built under survey are to be submitted and approved before the work of construction is commenced. These plans are to indicate clearly the scantlings and details of welding, and they are to include such particulars as the design draft and design speed. Where provision is to be made for any special type of cargo or for any exceptional conditions of loading, whether in ballast or with cargo, particulars of the weights to be carried and of their distribution are also to be given. As appropriate considering the vessel type and class notation, the following plans are to be submitted for review or reference.

- Anchor handling arrangements
- Bottom construction, floors, girders, etc.
- Bow framing
- Capacity plan
- Damage control plan , as applicable
- Deck plans
- Docking plan
- Framing plan
- General Arrangement
- Hatches and hatch-closing arrangements
- Hull port and framing details
- Inner bottom plating
- Lines and body plan
- Machinery casings, boiler, engine and main auxiliary foundations
- Midship section
- Miscellaneous nontight bulkheads which are used as structural supports
- Pillars and girders
- Scantling profile and decks

- Shaft struts
- Shaft tunnels
- Shell expansion
- Skeg attachment foundations, if applicable
- Spectacle frames and bossing details
- Stem
- Stern frame and rudder
- Stern framing
- Superstructures and deckhouses, and their closing arrangements
- Ventilation system on weather decks
- Vessel Specifications
- Watertight and deep-tank bulkheads
- Watertight doors and framing
- Weathertight doors, framing, and sill heights
- Welding Schedule and details
- Window and framing details
- Plans and supporting calculations for mooring structures.

Plans should generally be submitted electronically to ABS. However, hard copies will also be accepted.

3 Machinery Plans *(1 July 2013)*

Ship Equipment List (listing of all items that are to be fitted on the ship, including the item label, model/type, and manufacturer) is to be submitted.

Plans showing the boilers, main propulsion engines, reduction gears, shafting and thrust bearing foundations including holding-down bolts; also machinery general arrangement, installation and equipment plans are to be submitted and approved before proceeding with the work.

Where electrical cables, hydraulic lines, etc., penetrate watertight or fire rated bulkheads by the use of standardized penetration kits, a schedule is to be provided indicating the location, number, manufacturer, model number and type of Bulkhead Penetration Devices provided to maintain the bulkhead integrity.

5 Additional Plans

Where certification under 1-1-5/3 or 1-1-5/5 is requested, submission of additional plans and calculations may be required.

7 Plan Submittal *(1 March 2017)*

The party requesting ABS's review or approval of plans or information represents and warrants that (a) it owns all rights, title and interest in and to any submitted material and all intellectual property rights corresponding thereto or that (b) it has the authority to disclose the submitted material and all intellectual property rights corresponding thereto on behalf of the owner(s) of the submitted material.

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SECTION 8
Conditions for Surveys After Construction

1 Damage, Failure and Repair *(1 January 1996)*

1.1 Examination and Repair *(10 August 2004)*

Damage, failure, deterioration, or repair to hull, machinery, or equipment, which affects or may affect classification, is to be submitted by the Owners or their representatives for examination by a Surveyor at first opportunity. All repairs found necessary by the Surveyor are to be carried out to the Surveyor's satisfaction.

1.3 Repairs

Where repairs to hull, machinery, or equipment, which affect or may affect classification, are planned in advance to be carried out, a complete repair procedure including the extent of the proposed repair and the need for a Surveyor's attendance is to be submitted to and agreed upon by ABS reasonably in advance.

Note:

The above applies also to repairs during voyage.

The above is not intended to include maintenance and overhaul to hull, machinery, and equipment in accordance with the manufacturer's recommended procedures and established marine practice and which does not require ABS approval. However, any repair as a result of such maintenance and overhauls which affects or may affect classification is to be noted in the ship's log and submitted to the Surveyor, as required by 1-1-8/1.1.

1.5 Suspension of Classification *(10 August 2004)*

Failure to submit a damage, failure, deterioration, or repair governed by 1-1-8/1.1 to a Surveyor for examination at first opportunity, or failure to notify ABS in advance of the repairs contemplated by 1-1-8/1.3, may result in suspension of the vessel's classification from the date of arrival at the first port of call after the initial damage, failure, deterioration, or repair until such time as the damage, failure, or deterioration is repaired to the Surveyor's satisfaction, or the repair is redone or evidence submitted to satisfy the Surveyor that the repair was properly carried out.

1.7 Representation

Nothing contained in this Section or in a rule or regulation of any government or other Administration, or the issuance of any report or certificate pursuant to this Section or such a rule or regulation is to be deemed

to enlarge upon the representations expressed in Section 1-1-1 hereof and the issuance and use of any such reports or certificates are to be governed in all respects by Section 1-1-1 hereof.

3 Notification and Availability for Survey *(1 April 2010)*

The Surveyors are to have access to classed vessels at all reasonable times. For the purpose of Surveyor Monitoring, monitoring Surveyors shall also have access to classed vessels at all reasonable times. Such access may include attendance at the same time as the assigned Surveyor or during a subsequent visit without the assigned Surveyor. Auditors from an independent Accredited Certification Body (ACB) selected by ABS, International Association of Classification Societies (IACS), and/or Flag Administration shall also be granted access when requested by ABS and accompanied by ABS personnel. The Owners or their representatives are to notify the Surveyors on all occasions when a vessel can be examined in dry dock or on a slipway.

The Surveyors are to undertake, with adequate notification, all surveys on classed vessels upon request of the Owners or their representatives and are to report thereon to the Committee. Should the Surveyors find occasion during any survey, to recommend repairs or further examination, notification is to be given immediately to the Owners or their representatives in order that appropriate action may be taken. The Surveyors are to avail themselves of every convenient opportunity for carrying out periodical surveys in conjunction with surveys of damages and repairs in order to avoid duplication of work.

The Owners or their representatives are responsible for establishing and maintaining safe working conditions in accordance with applicable safety standards and for providing Surveyors with safe access to sites and assistance during construction, repairs, testing, and trials. Surveyors shall comply with Owner's safety procedures to the extent such procedures are communicated to them. If Surveyors feel the proposed working conditions are unsafe, they may refuse to attend the work site.

5 Notification of Port State Detention *(1 February 2012)*

The Owners or their representatives are to notify ABS on all occasions when a vessel is being detained by a Port State Authority, or the Flag Administration has found deficiencies which affect the vessel's class or other Statutory Certificates issued by ABS. This notification shall be provided prior to the vessel's departure in order that a Surveyor may attend and carry out a survey for the purpose of assessing and verifying the correction, if necessary, of the reported deficiencies or other matters which affect or may affect classification or the validity of Statutory Certificates issued by ABS. If Surveyors are not able to attend for any reason, ABS will notify the Owner to arrange for attendance in the next port of call. Should an Owner not notify ABS of a detention, then ABS reserves the right to suspend or cancel classification of the vessel or invalidate the applicable Statutory Certificate

7 Attendance at Port State Request *(1 January 1996)*

It is recognized that Port State authorities may legally have access to a vessel. In cooperation with Port States, ABS Surveyors will attend onboard a classed vessel when so requested by a Port State, and upon concurrence by the vessel's master, will carry out a survey in order to facilitate the rectification of reported deficiencies or other discrepancies that affect or may affect classification. ABS Surveyors will also cooperate with Port States by providing inspectors with background information, if requested. Such information includes text of conditions of class, survey due dates, and certificate expiration dates.

Where appropriate, the vessel's flag state will be notified of such attendance and survey.

9 Attendance at ABS Request *(2003)*

As a result of Port State deficiencies, ABS may request an unscheduled survey be carried out to confirm conditions onboard. Should an Owner not allow ABS onboard to conduct an unscheduled survey, the ABS classification of the vessel will be suspended or cancelled.

11 Safety Management System *(2002)*

It is recognized that a Safety Management System is a positive mechanism for managing maintenance of compliance with classification requirements on vessels subject to compliance with the International Safety Management (ISM) Code, as defined in SOLAS IX/1.1. If during any survey, the attending ABS Surveyor finds evidence that the required safety management system is not in operation or functioning as required by the Code, this will be communicated to the relevant Flag Administration or the organization which issued the safety management certificate on behalf of the Flag Administration for their consideration and action.

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CHAPTER 1
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SECTION 9
Fees

Fees, in accordance with normal ABS practice, will be charged for all services rendered by ABS. Expenses incurred by ABS in connection with these services will be charged in addition to the fees. Fees and expenses will be billed to the party requesting that particular service.

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CHAPTER 1
Scope and Conditions of Classification

SECTION 10
Disagreement

1 Rules

Any disagreement regarding either the proper interpretation of the Rules and Guides or translation of the Rules and Guides from the English language edition is to be referred to ABS for resolution.

3 Surveyors

In case of disagreement between the Owners or builders and the Surveyors regarding the material, workmanship, extent of repairs or application of the Rules and Guides relating to any vessel classed or proposed to be classed by ABS, an appeal may be made in writing to the Committee, who will order a special survey to be held. Should the opinion of the Surveyor be confirmed, the expense of this special survey is to be paid by the party appealing.

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SECTION 11
Limitation of Liability *(1 November 2004)*

The combined liability of American Bureau of Shipping, its committees, officers, employees, agents or subcontractors for any loss, claim or damage arising from its negligent performance or nonperformance of any of its services or from breach of any implied or express warranty of workmanlike performance in connection with those services, or from any other reason, to any person, corporation, partnership, business entity, sovereign, country or nation, will be limited to the greater of a) $100,000 or b) an amount equal to ten times the sum actually paid for the services alleged to be deficient.

The limitation of liability may be increased up to an amount twenty-five times that sum paid for services upon receipt of Client's written request at or before the time of performance of services and upon payment by Client of an additional fee of $10.00 for every $1,000.00 increase in the limitation.

Under no circumstances shall American Bureau of Shipping be liable for indirect or consequential loss or damage (including, but without limitation, loss of profit, loss of contract, or loss of use) suffered by any person as a result of any failure by ABS in the performance of its obligations under these Rules. Under no circumstances whatsoever shall any individual who may have personally caused the loss, damage or expense be held personally liable.

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SECTION 12
Hold Harmless *(1 November 2004)*

The party requesting services hereunder, or his assignee or successor in interest, agrees to release ABS and to indemnify and hold harmless ABS from and against any and all claims, demands, lawsuits or actions for damages, including legal fees, to persons and/or property, tangible, intangible or otherwise which may be brought against ABS incidental to, arising out of or in connection with this Agreement, the work to be done, services to be performed or material to be furnished hereunder, except for those claims caused solely and completely by the negligence of ABS, its agents, employees, officers, directors or subcontractors. The parties agree that for the purposes of the Convention on Limitation of Liability for Maritime Claims, 1976, ABS is a person for whose acts the shipowner is responsible.

Any other individual, corporation, partnership or other entity who is a party hereto or who in any way participates in, is engaged in connection with or is a beneficiary of, any portion of the services described herein shall also release ABS and shall indemnify and hold ABS harmless from and against all claims, demands, lawsuits or actions for damages, including legal fees, to persons and/or property, tangible, intangible or otherwise, which may be brought against ABS by any person or entity as a result of the services performed pursuant to this Agreement, except for those claims caused solely and completely by the negligence of ABS, its agents, employees, officers, directors or subcontractors.

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SECTION 13
Time Bar to Legal Action *(1 November 2004)*

Any statutes of limitation notwithstanding, Owner's right to bring or to assert against ABS any and all claims, demands or proceedings whether in arbitration or otherwise shall be waived unless (a) notice is received by ABS within ninety (90) days after Owner had notice of or should reasonably have been expected to have had notice of the basis for such claims; and (b) arbitration or legal proceedings, if any, based on such claims or demands of whatever nature are commenced within one (1) year of the date of such notice to ABS.

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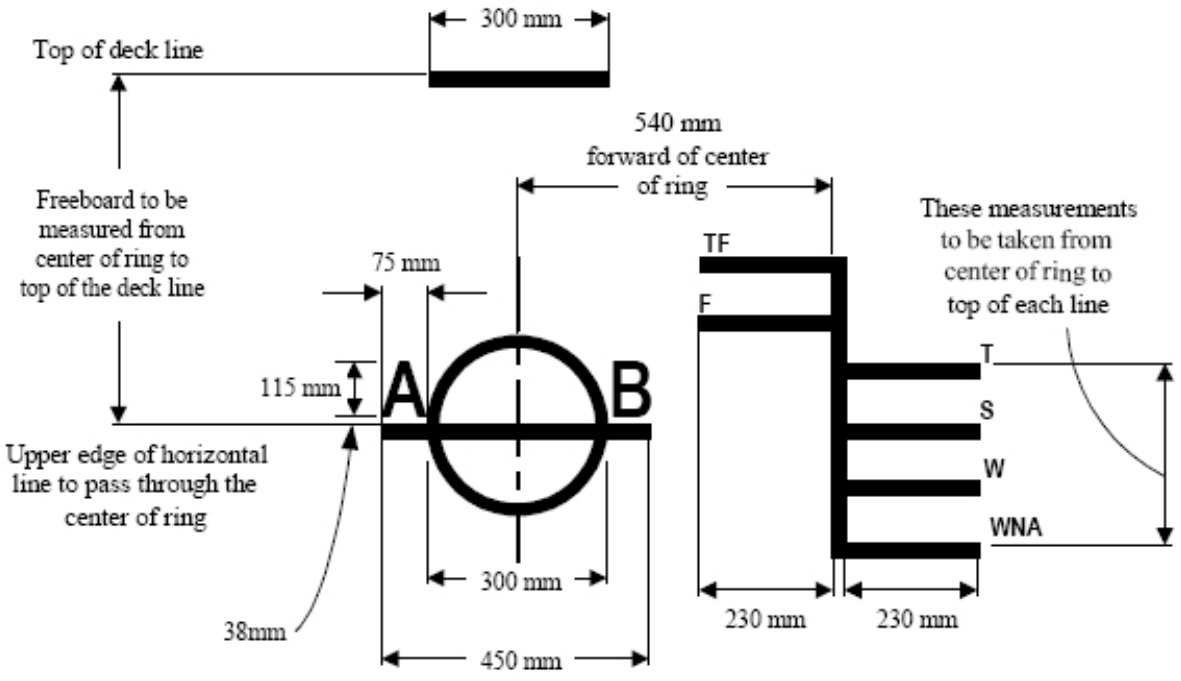
SECTION 14
Arbitration *(1 November 2004)*

Any and all differences and disputes of whatsoever nature arising out of services under these Rules shall be put to arbitration in the City of New York pursuant to the laws relating to arbitration there in force, before a board of three persons, consisting of one arbitrator to be appointed by ABS, one by the Client, and one by the two so chosen. The decision of any two of the three on any point or points shall be final. Until such time as the arbitrators finally close the hearings either party shall have the right by written notice served on the arbitrators and on an officer of the other party to specify further disputes or differences under these Rules for hearing and determination. The arbitration is to be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc. in the English language. The governing law shall be the law of the State of New York, U.S.A. The arbitrators may grant any relief other than punitive damages which they, or a majority of them, deem within the scope of the agreement of the parties, including, but not limited to, specific performance. Awards made in pursuance to this clause may include costs including a reasonable allowance for attorney's fees and judgment may be entered upon any award made hereunder in any court having jurisdiction.

1 Load Line Markings for Ocean-going Vessels – Millimeters

The American Bureau of Shipping is authorized to assign Load Lines to vessels registered in the United States and other countries. Requests for the assignment of Load Lines are to be made on forms which will be furnished by one of the offices of ABS.



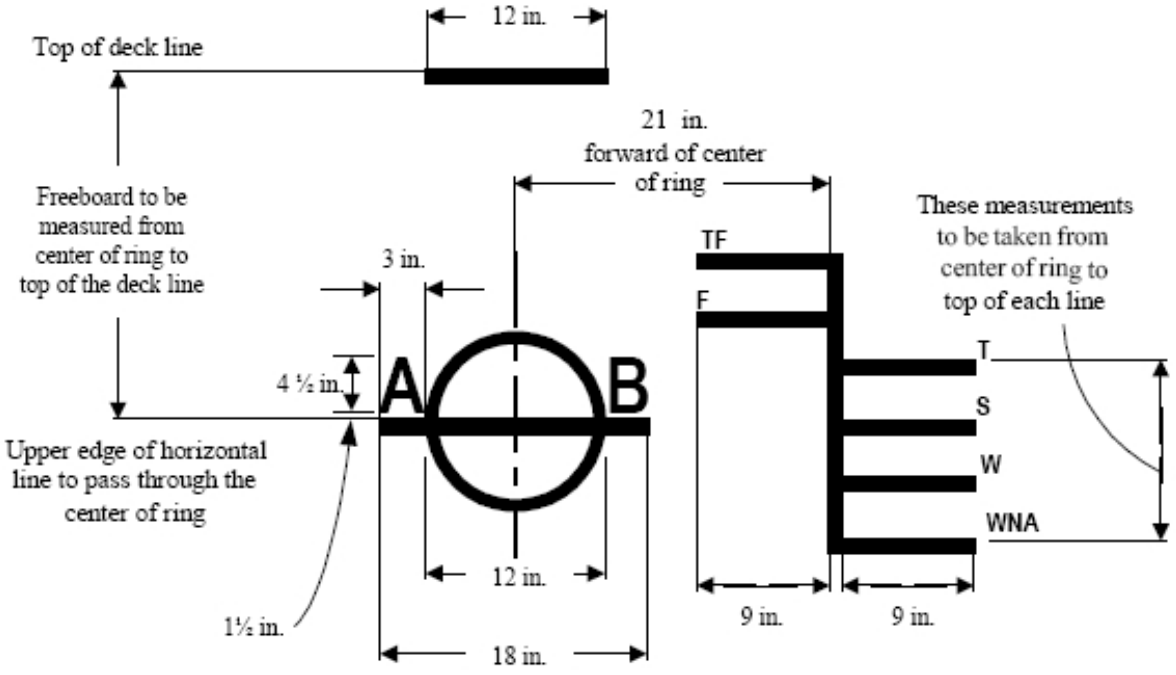
Thickness of all lines 25mm

The center of the ring is to be placed on each side of the vessel at the middle of the length, as defined in the Load Line Regulations. The ring and lines are to be permanently marked, as by center punch, chisel cut or bead of weld.

AB	American Bureau of Shipping
TF	Tropical Fresh Water Allowance
F	Fresh Water Allowance
T	Load Line in Tropical Zones
S	Summer Load Line
W	Winter Load Line
WNA	Winter North Atlantic Load Line

3 Load Line Markings for Ocean-going Vessels – Inches

The American Bureau of Shipping is authorized to assign Load Lines to vessels registered in the United States and other countries. Requests for the assignment of Load Lines are to be made on forms which will be furnished by one of the offices of ABS.



Thickness of all lines 1 in.

The center of the ring is to be placed on each side of the vessel at the middle of the length, as defined in the Load Line Regulations. The ring and lines are to be permanently marked, as by center punch, chisel cut or bead of weld.

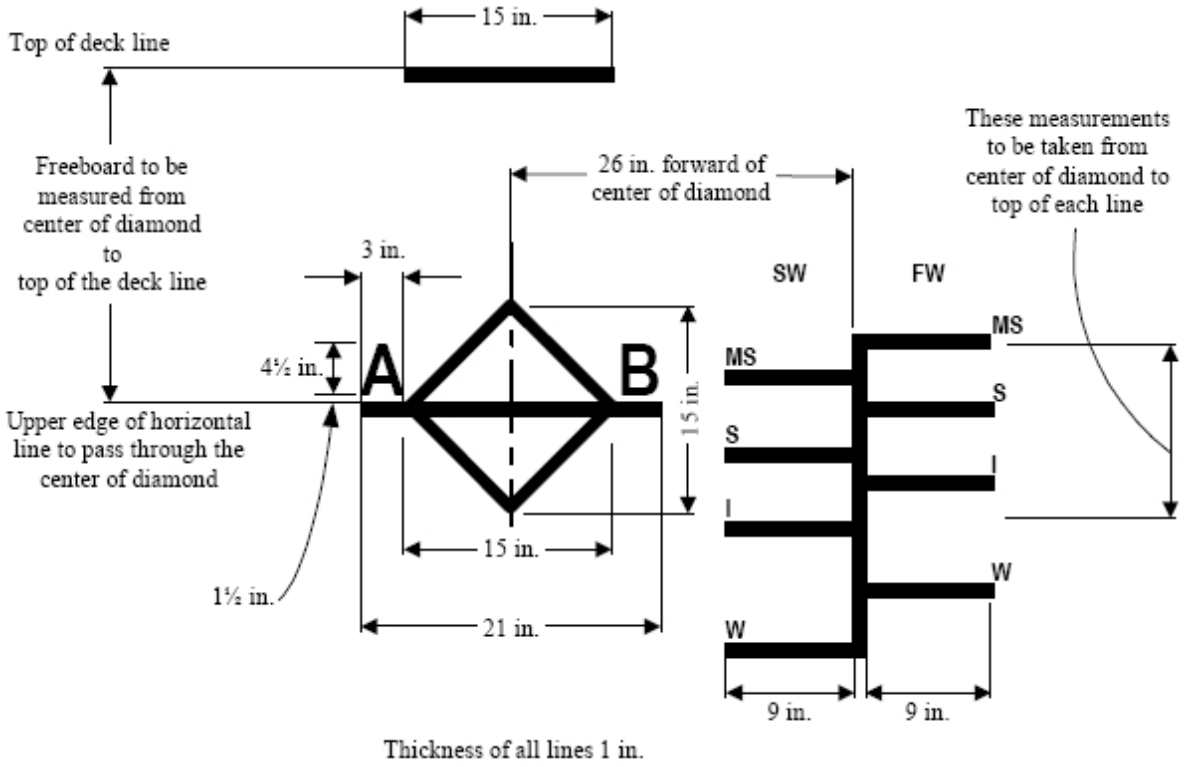
AB	American Bureau of Shipping
TF	Tropical Fresh Water Allowance
F	Fresh Water Allowance
T	Load Line in Tropical Zones
S	Summer Load Line

W Winter Load Line

WNA Winter North Atlantic Load Line

5 Load Line Markings for Great Lakes Vessels – Inches

The American Bureau of Shipping is authorized to assign Load Lines to vessels navigating on the Great Lakes registered in the United States and Canada. Requests for the assignment of Load Lines are to be made on forms which will be furnished by one of the offices of ABS.



The Center of Diamond is to be placed on both sides of the vessel at the middle of the length on the load line. The diamond and lines are to be permanently marked by center punch or chisel, and the particulars given in the Load Line Certificate are to be entered in the official log.

The markings are shown for the starboard side. On the port side, the markings are to be similar, forward of diamond.

AB American Bureau of Shipping

MS Midsummer Load Line

S Summer Load Line

I Load Line in Intermediate Seasons

W Winter Load Line

SW Salt Water

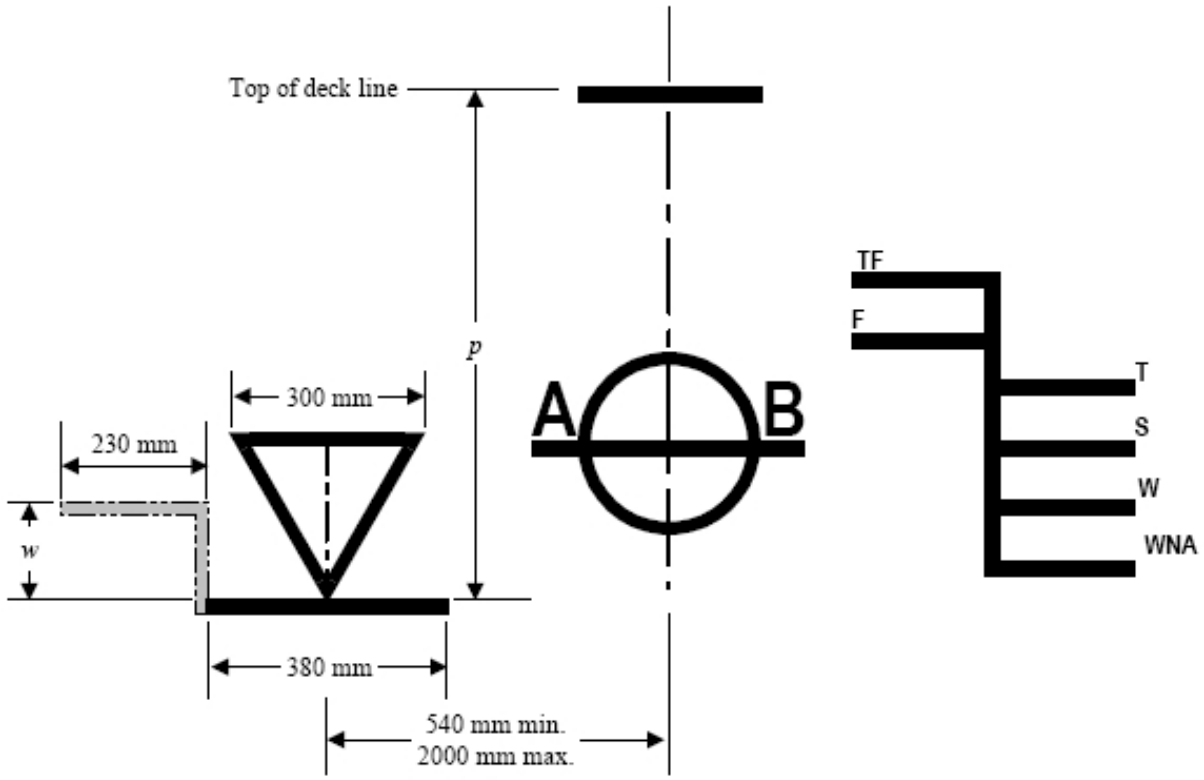
FW Fresh Water

Note:

The salt water marks are assigned only to vessels intending to load in salt water of the St. Lawrence River.

7 Tonnage Mark Diagram – For Vessels Operating with Dual Tonnage – Millimeters

The American Bureau of Shipping is authorized to assign a Tonnage Mark to vessels registered in the United States and other countries. Requests for the assignment of a Tonnage Mark are to be made in writing to any of the offices of ABS.



Thickness of all lines 25 mm

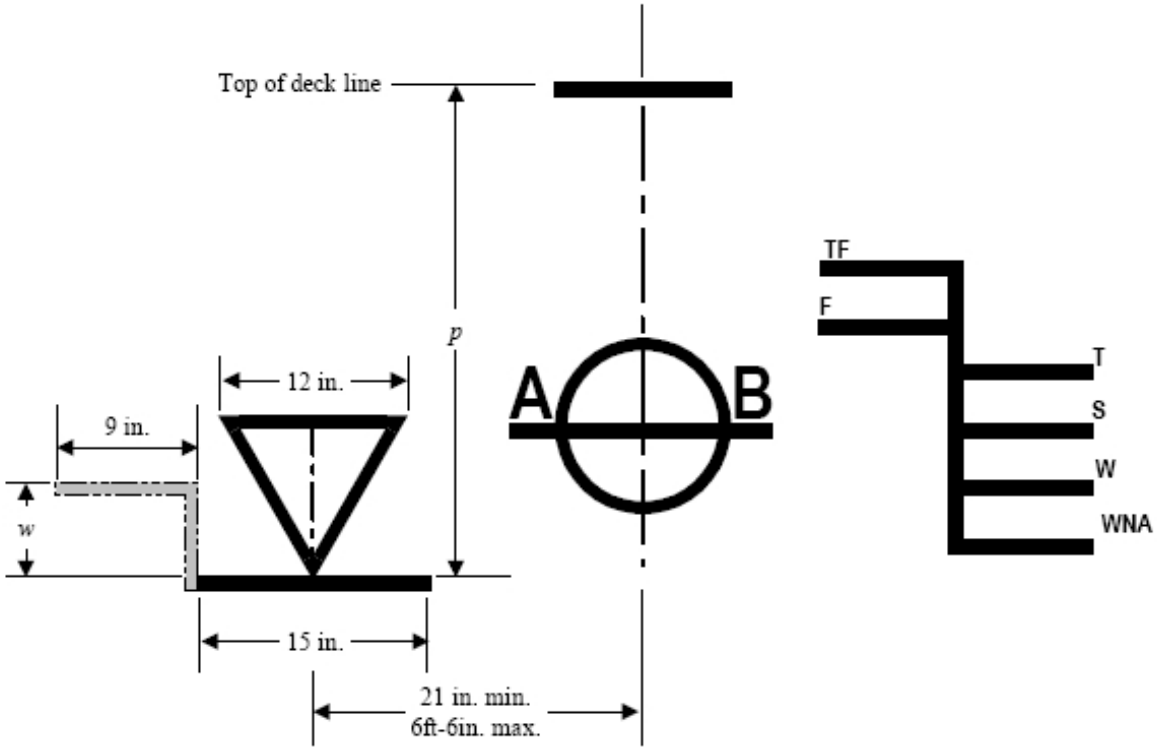
w = Allowance for Fresh Water and Tropical Waters ($^{1}/_{48}$ of the Molded Draft to the Tonnage Mark)

p = Distance from Deck Line to Tonnage Mark

The Tonnage Mark has been adopted by some governments as a means of controlling the inclusion or omission of certain spaces in calculating the gross tonnage of the vessel by regulating the draft, through use of the Tonnage Mark, rather than fitting "tonnage openings" in superstructures or tween deck bulkheads or a "tonnage hatch" in the weather deck as a means of omitting the spaces.

9 Tonnage Mark Diagram – For Vessels Operating with Dual Tonnage – Inches

The American Bureau of Shipping is authorized to assign a Tonnage Mark to vessels registered in the United States and other countries. Requests for the assignment of a Tonnage Mark are to be made in writing to any of the offices of ABS.



Thickness of all lines 1 in.

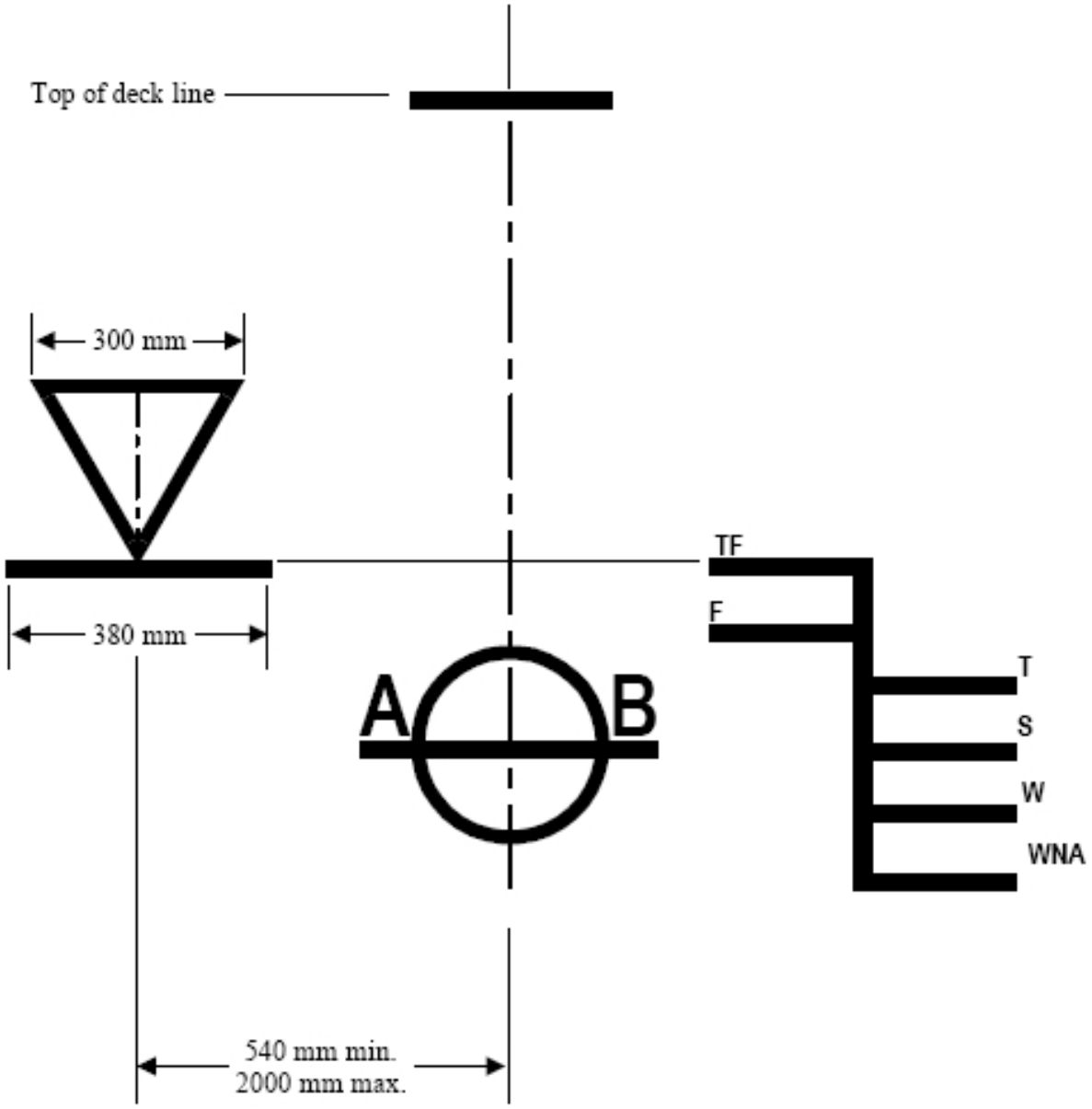
w = Allowance for Fresh Water and Tropical Waters ($^1/_{48}$ of the Molded Draft to the Tonnage Mark)

p = Distance from Deck Line to Tonnage Mark

The Tonnage Mark has been adopted by some governments as a means of controlling the inclusion or omission of certain spaces in calculating the gross tonnage of the vessel by regulating the draft, through use of the Tonnage Mark, rather than fitting "tonnage openings" in superstructures or tween deck bulkheads or a "tonnage hatch" in the weather deck as a means of omitting the spaces.

11 Tonnage Mark Diagram – For Vessels Operating with Single Low Tonnage – Millimeters

The American Bureau of Shipping is authorized to assign a Tonnage Mark to vessels registered in the United States and other countries. Requests for the assignment of a Tonnage Mark are to be made in writing to any of the offices of ABS.

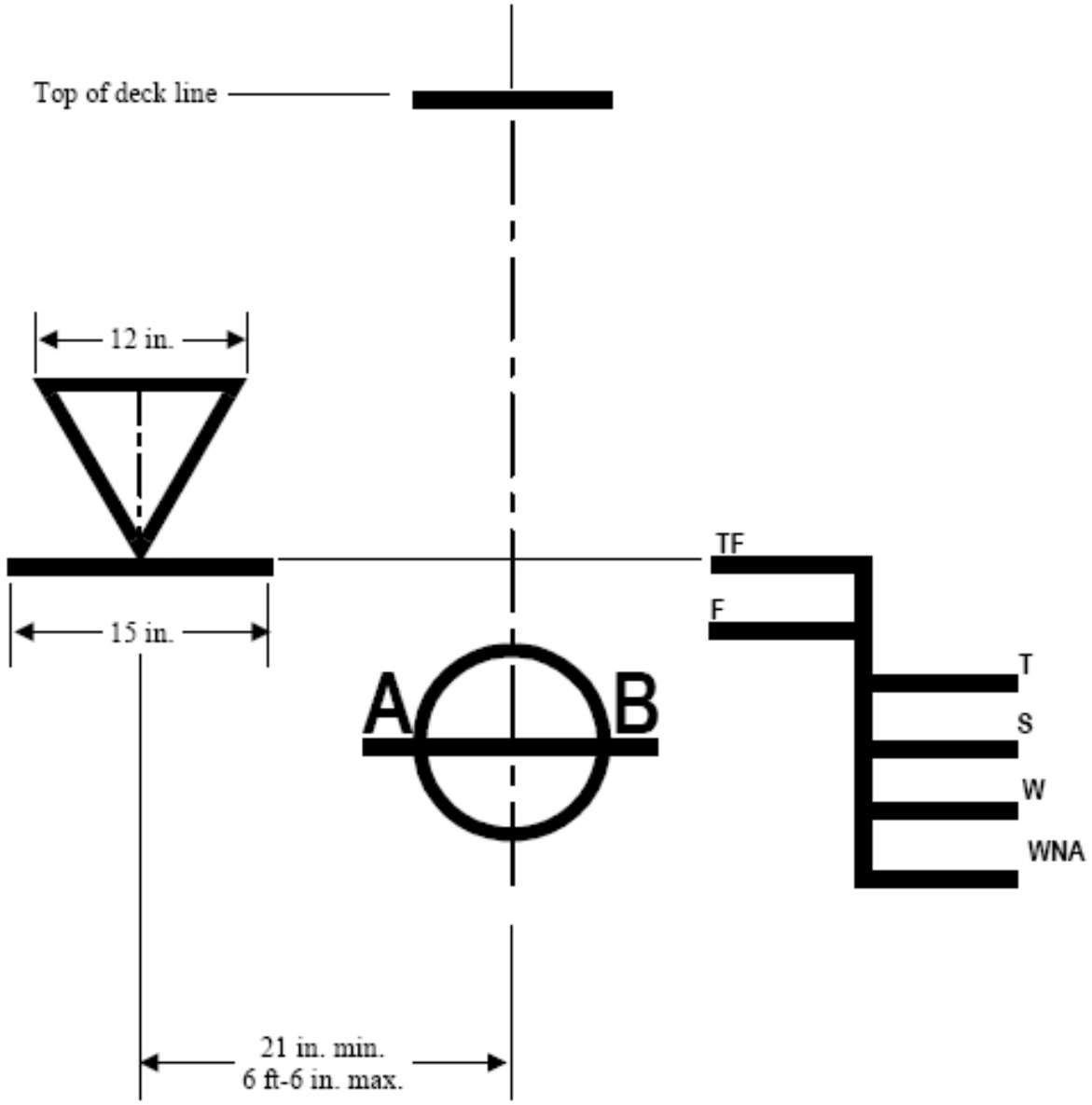


Thickness of all lines 25 mm

When the load line assigning authority certifies that the load line is fixed at a place determined as though the second deck were the freeboard deck, the tonnage mark may be place below the deck less than the minimum distance derived from the tonnage mark table. In that case, the tonnage mark is to be placed on the level of the uppermost part of the load line grid. If the tonnage mark is so placed, the additional line for fresh water and tropical waters is not to be used.

13 Tonnage Mark Diagram – For Vessels Operating with Single Low Tonnage – Inches

The American Bureau of Shipping is authorized to assign a Tonnage Mark to vessels registered in the United States and other countries. Requests for the assignment of a Tonnage Mark are to be made in writing to any of the offices of ABS.



Thickness of all lines 1 in.

When the load line assigning authority certifies that the load line is fixed at a place determined as though the second deck were the freeboard deck, the tonnage mark may be place below the deck less than the minimum distance derived from the tonnage mark table. In that case, the tonnage mark is to be placed on the level of the uppermost part of the load line grid. If the tonnage mark is so placed, the additional line for fresh water and tropical waters is not to be used.

PART 1

CHAPTER 1
Scope and Conditions of Classification

APPENDIX 2
Classification Symbols and Notations

The listing of Classification Symbols and Notations previously contained in this Appendix may be viewed and downloaded from the ABS website “http://www.eagle.org”.

PART 1

CHAPTER 1
Scope and Conditions of Classification

APPENDIX 3
ABS Type Approval Program

1 General *(2014)*

When Type Approval is desired, applicants are required to submit a signed Request for Product Type Approval, identifying all adopted standards by the year of their last issuance. The Type Approval Program is made up of two components, Design Assessment and Manufacturing Assessment:

Design Assessment, which is approval of the product design, consists of:

i) Design evaluation, and

ii) Survey and/or testing of a prototype or a production unit (as appropriate)

Manufacturing Assessment, which is approval of the manufacturer, consists of:

i) *Management Assessment*. Evaluating the quality assurance and quality control system of the manufacturing facilities in order to assess and verify their capability to meet the manufacturer's specified level of product quality consistently and satisfy the requirements of the Rules, as applicable. Two categories of quality assurance and quality control are in the Program:

- Recognized Quality System (RQS) is a system that is certified to be in compliance with a recognized standard at least to ISO 9000 series or equivalent and so certified by a recognized certification body. Equivalency will be determined on a case by case basis.
- Product Quality Assurance (PQA) is a system meeting the requirements for RQS and having additional approved procedures to allow a manufacturer to carry out tests and surveys as required by the Rules to be witnessed by a Surveyor.

ii) *Production Assessment*. Evaluating the product specific manufacturing process of the manufacturer in order to assess and verify that manufacture and inspections of the products are established to provide the manufacturer's specified level of quality control, and to satisfy the requirements of the Rules.

The Design Assessment portion of the Type Approval Program is to be done with a signed Request for Type Approval. The request for Type Approval must be submitted for both the original and revised Design Assessments. If Manufacturing Assessment is required, as with Products being manufactured under PQA or using a PDA-DUP, it must also be requested on the application for Type Approval. The application of the Manufacturing Assessment portion can be done only in conjunction with Design Assessment.

The purposes of the Type Approval Program are:

i) To avoid repeated evaluation of identical designs,

ii) To allow acceptance of the product based on periodic surveillance of the manufacturer's quality assurance program and, where applicable, selective inspection and tests in lieu of surveying and testing individual units at the manufacturer's facility, (see 1-1-A3/5.3 and 1-1-A3/5.5) and

iii) To maintain a list of approvals and the type of approvals as defined in the Type Approval Program. These listings will be maintained on the ABS website so that the information is verifiable and available to the industry.

3 Limitations *(2014)*

The application of the Type Approval Program to a specific product is at the discretion of ABS. Those products that may not be type approved under the Type Approval Program are identified in the appropriate Sections of the Rules. For reference purposes, Tables 1 through 6 in Section 4-1-1, 4-2-1/15.11 TABLE 1 and Tables 1 through 3 in Section 4-4-1 of the *Marine Vessel Rules* contain examples of the limitations of the program for machinery and equipment.

ABS will continue to require witnessed testing for products type approved under the Recognized Quality System (RQS) that require unit certification. Where Product Quality Assurance Certificate (PQA) is granted to Tier 4 products, Surveyor witnessed testing during the manufacture of the product, as required by the Rules, may be delegated to a manufacturer as per the approved Manufacturing Assessment.

Where the product is manufactured to an Administration standard, any request to waive witnessed testing must be approved by the Administration.

5 Process *(2003)*

The process of the Type Approval Program is shown schematically in 1-1-A3/5.9.11 FIGURE 1. Each step in the process will be described in the following.

5.1 Product Design Assessment (PDA) Tier 2 *(2014)*

5.1.1 Design Evaluation

Plans showing details of construction, and documentation such as product specifications, performance data, standard of compliance, engineering analyses, etc., as applicable, are to be submitted for evaluation. Prior to further consideration for ABS Type Approval, the design must first show compliance with the applicable requirements of the Rules or an alternative standard as may be permitted by the Rules. Products for which there are no specific standards in the Rules may be evaluated based on recognized industry standards or, in the absence of applicable Rules or industry criteria, the manufacturer's standard or specifications and/or engineering analyses may be considered. The basis of design evaluation will be stated in ABS's documentation concerning the product. The design evaluation is intended to fulfill the requirements of the first element of the Type Approval Program, as described in 1-1-A3/1. It is the first step in determining that, provided that all other Rule requirements are complied with and subject to completion of manufacture and testing to the satisfaction of the attending Surveyor, the product may be used onboard a vessel, MODU or a facility classed by ABS.

A Product Design Assessment (PDA) may only be issued to the Designer or the Original Equipment Manufacturer (OEM). This is the entity that has legal or patent rights to produce the material, component, product or system. ABS will consider the Designer or the OEM to be responsible for the continued compliance of the PDA as assessed. A designer or OEM obtaining a PDA with the intent of having the product Type Approved must then request a Manufacturing Assessment. When and where the product may be manufactured is at the discretion of the owner of the PDA. If the Designer or OEM decides to license or allow the manufacture of the product by

a secondary entity, then that secondary entity may receive a Duplicated Product Design Assessment (PDA-DUP). See 1-1-A3/5.1.5.

5.1.2 Survey and/or Testing of Prototype or Production Units *(1 July 2021)*

Where applicable, and as deemed to be a necessary part of the evaluation process, the manufacturer is to carry out, in the presence of a Surveyor, performance, nondestructive, destructive, environmental, or other tests on the product as may be specified in the Rules, in the applicable standard, or in the manufacturer's specifications. If the required testing has been or is done in a recognized independent testing facility that is acceptable to ABS, consideration will be given to acceptance of test results obtained without a Surveyor present. If the required testing has been or is done in a manufacturer's facility that is certified to ISO 9001 and 1-1-A3/5.3.1(b) of these Rules, the Surveyor shall specify what testing is to be witnessed.

5.1.3 Product Design Assessment Certificate

Products evaluated in accordance with 1-1-A3/5.1.1 and 1-1-A3/5.1.2 and found to be in conformance with the applicable provisions of the Rules, standards, or specifications will be issued a Product Design Assessment Certificate. Designs so approved will be eligible for listing on the ABS website under the Product Design Assessment (PDA) index. They will remain in this index until a Manufacturing Assessment Certificate (MA) is issued at which point the product will be eligible for listing under the Type Approved Product (PTA) index.

A Product Design Assessment Certificate, by itself, does not reflect that the product is type approved. For that purpose, manufacturing assessment is to be carried out in accordance with 1-1-A3/5.3 or 1-1-A3/5.5.

5.1.4 Product Design Assessment, Limited

When a Product Design Assessment Certificate expires or is otherwise nullified by a Rule or specification change, the option of maintaining the listing in the category of Product Design Assessment, Limited (PDA Ltd.) index is available. There will be three categories in this PDA Ltd index:

i) A product whose certificate has expired and that is pending renewal but requires technical revalidation prior to issuance of a new certificate. The term of validity will be one year from the date of expiration of the PDA.

ii) A product that will be listed as in compliance with a previous Rule and remains valid only for vessels contracted for, on or before the effective date of the Rule. The effective date will be included in the service restrictions of the product. The term of validity will be five years subject to continued compliance with the applicable Rule.

iii) A system, the components of which have been evaluated, as a unit, and found in compliance with the Rules; however, final approval will be contingent upon the evaluation of the proposed on board installation.

5.1.5 Duplicate Product Design Assessment *(2018)*

If the Designer or OEM chooses to license or allow the manufacture of the product by a secondary entity, then that secondary entity will receive a Duplicated Product Design Assessment (PDA-DUP) as follows:

i) The Designer or OEM responsible for the original PDA must confirm in writing to the secondary manufacturer that they may use the OEM's PDA and approval documentation (Intellectual Property), unless the application for the Duplicate PDA is submitted by the Designer or OEM company (i.e., the designer or OEM give consent to issue Duplicate PDA to the secondary manufacturer).

ii) An application is to be submitted by the secondary manufacturer to the local ABS Technical Office along with evidence of the OEM's approval. The OEM's approval is to be submitted by the secondary manufacturer,unless the application for the Duplicate PDA is submitted by the OEM. The application is also to contain all the necessary drawings and data the OEM submitted to ABS as part of the original Design Assessment. The drawings may be already approved drawings that are the property of the OEM and have been passed on as an extension of approval to the secondary manufacturer as part of the intellectual property transfer. The OEM must agree that the ABS electronic copies of the approved drawings may be duplicated into the PDA-DUP.

iii) Each PDA-DUP certificate issued to a secondary manufacturer will use the original's PDA number with the addition of "-DUP". As an example, the numbering will be 01-LD123456-PDA-DUP. The issue date of the PDA-DUP will be the date it is created. The expiration date of the PDA-DUP must be the same as the original PDA.

iv) Each manufacturer or secondary manufacturer will be responsible for the product marketed under his PDA-DUP certificate.

v) ABS must approve any variations from the original approved product in consultation with the OEM.

vi) The terms and conditions of the Duplicated PDA will be outlined to the secondary manufacturer in the approval letter.

vii) It is mandatory that in order to have products covered by a PDA-DUP the secondary manufacturer must also hold a valid MA. Each secondary manufacturer is responsible for arranging mandatory Manufacturing Assessments as required by the Rules or standards. PDA-DUPs that do not have a valid MA 91 days after the anniversary date of the issue of the PDA-DUP will be prevented from publishing as ABS Type Approved.

viii) If the MA annual audits are not done within 91 days, the PDA-DUPs will be prevented from publishing.

ix) If the MA expires, the PDA-DUPs will be prevented from publishing.

5.3 Manufacturing Assessment (MA) *(2003)*

5.3.1 Quality Assurance Standard

5.3.1(a) Manufacturer's Procedure (2014).

Prior to commencement of audit, the manufacturer is to submit to the Surveyor a copy of their certified ISO9001 certificate, or recognized equivalent, and a quality plan setting out the applicable controls that are planned to be performed on the material, component, product or system for compliance with the Rules, Guides or other standards. The plan is not to be limited to the following:

- Issuance of material specifications for purchasing
- Receiving inspection of materials
- Receiving inspection of finished components and parts
- Dimensional and functional checks on finished components and parts
- Edge preparation and fit-up tolerances
- Welding procedure qualification
- Welder qualification
- Weld inspection plan
- Welding defect tracking
- NDT written procedures and qualification documentation

- NDT plan
- Casting and weld defect resolutions
- Assembly and fit specifications
- Subassembly inspection: alignment and dimension checks, functional tests
- Testing of safety devices
- Hydrostatic testing plan
- Factory Acceptance Test Plan

5.3.1(b) Recognized Quality Standard (RQS) (2014).

The manufacturer is to have in place an effective quality assurance system certified by an internationally recognized certification body as complying with a recognized quality standard at least equivalent to the ISO 9000 series. Equivalency will be determined on a case by case basis. Such certification is to be valid at least during the validity of Manufacturing Assessment Certificate. In addition, the Manufacturing Procedure, see 1-1-A3/5.3.1(a), as implemented by the manufacturer is to be acceptable to ABS. For that purpose, a confirmatory evaluation will be conducted by the Surveyor, which will involve initial, annual and renewal audits of the quality system, in accordance with the provisions of the applicable quality assurance standard. Where considered necessary by the attending Surveyor, more frequent surveillance may be required to maintain the certification.

5.3.1(c) Quality Manual.

The manufacturer is to maintain a quality manual as may be required by the standard Where a recognized certification body has approved the Quality Manual, ABS will not require them to be submitted for ABS's approval.

5.3.2 Quality Control

Typical quality plans describing methods of assuring and controlling quality during production as may be required by the product specifications or standard will be subject to evaluation by ABS. In particular, quality plans are to reflect specific surveys, tests, etc. wherever required by the Rules. The manufacturer is to present a sample or specimen of the product, representative of the "type" to be approved, to the Surveyor for the purpose of verifying that the "type" has been manufactured in conformance with the design documents.

5.3.3 Manufacturing Assessment Certificate (MA)

Manufacturing facilities that are successfully audited in accordance with 1-1-A3/5.3.1 and 1-1-A3/5.3.2 and are found to:

i) Have undergone a satisfactory product design evaluation, and

ii) Comply with a quality assurance standard, and

iii) Have manufacturing quality control that meets the applicable provisions of the Rules, or of the applicable product standard, or the manufacturer's specifications,

will be issued a Manufacturing Assessment Certificate (MA) by the attending Surveyors. Manufacturers so assessed will be eligible for listing on the ABS website under the Type Approved Product (PTA) index together with the PDA Certificate data, as appropriate.

5.3.4 Confirmation of Type Approval (CTA) *(2005)*

Those products with both a valid Design Assessment Certificate (1-1-A3/5.1.3) and a valid Manufacturing Assessment Certificate (1-1-A3/5.3.3) are eligible for a Confirmation of Type Approval. This certificate may be printed from the ABS website only when all parts of the Type

Approval Program remain current. (See also 1-1-A3/5.7.3) The Confirmation of Type Approval represents the information recorded by ABS on the product as of the date and time the certificate is printed.

5.5 Product Quality Assurance Certification (PQA) Tier 4 (IACS UR Z26 Alternative Certification Scheme) *(1 December 2018)*

A Product Quality Assurance Certificate (PQA) will be issued to a manufacturer who has requested that Rule-required surveys and tests be conducted without an ABS Surveyor in attendance. The manufacturer also has the option to place products not requiring unit certification into this program. Products that do not require unit certification are to follow the requirements of 1-1-A3/5.7 for unit certified products; national standards or client specifications may be used when no ABS requirement is available. For that purpose, the manufacturer is to meet the requirements for Type Approval as described in 1-1-A3/5.3 and, in addition, is to have a quality assurance system in operation that is at least as effective as the Surveyor's attendance at those surveys and tests. The scope of manufacturing assessment will be expanded to include a confirmatory evaluation, including at least initial, semi-annual, annual, and renewal audits of the quality system, in accordance with the provisions of the applicable quality assurance standard and ABS own criteria. When requested by the manufacturer, consideration will be given to crediting a semi-annual audit based on a Surveyor's recommendation after attendance for Unit Certification or a surveillance visit on or about the due date of the semi-annual audit. The semi-annual audit will have a window of 30 days before and 30 days after the midpoint between annual audits.

The issuance of a Product Quality Assurance Certificate is contingent upon the recommendation by the attending Surveyor, seconded by the Surveyor in Charge and final approval by the Manager of the Type Approval Program. During the manufacture of the product, the Product Quality Assurance certification will provide an alternative to the requirements for witnessed testing by a Surveyor. This is not a relaxation of the Rule requirement for production testing, but rather allows such testing to be conducted without a Surveyor being present. In order to ensure continued compliance with the Rules, Guides or standards, a batch inspection verification system is to be agreed between the Surveyors and the manufacturer that will allow a random individual certification of production.

Where conditions justify the need for increased surveillance, the PQA does not preclude the Surveyor in Charge from expanding the scope of surveillance. Where the situation (e.g., frequency of ABS Unit Certification, batch test results, etc.) warrants such action, ABS may require a closer interval of surveillance surveys. In such instances, the requirement for a renewal audit will be specially considered. See 1-1-A3/5.7.4. ABS also reserves the right to conduct unscheduled surveillance surveys.

Manufacturers receiving a Product Quality Assurance Certificate will be distinguished on the ABS website by an added notation (PQA)/Tier 4.

5.7 Certificates *(2003)*

5.7.1 Unit-Certification *(2014)*

When a Type Approved Product is proposed for use onboard a vessel or a marine structure, it is to comply with all applicable requirements in the Rules, including 1-1-A3/5.7.3 hereunder. Where required by the ABS Rules, Unit Certification may also to be completed as follows:

5.7.1(a) Products Covered by Product Quality Assurance (1-1-A3/5.5) Tier 4.

Products requiring unit-certification for use on a vessel, MODU, or facility classed with ABS will be unit-certified by the ABS office having jurisdiction over the manufacturer. The manufacturer will be responsible to advise the ABS office of deliveries of products and to supply the ABS office with all documentation required for unit-certification of the product and a "Declaration of Conformity with Approved Type". The following form of declaration will be accepted if printed on each shipping document report with the name of the firm and initialed by the authorized representative of the manufacturer:

"We hereby certify that the product described herein has been manufactured to the applicable ABS Rules dated yyyy. The product has been tested in accordance with the requirements of the American Bureau of Shipping Rules."

At the request of manufacturers, consideration may be given to modifications in the form of the declaration, provided it correspondingly indicates compliance with the requirements of the Rules to no less degree than indicated in the foregoing statement.

5.7.1(b) Products with Manufacturing Assessment (1-1-A3/5.3) Requiring Unit Certification Tier 5.

Where the Rules require attendance of the ABS Surveyor during any stage of manufacturing, including but not limited to any testing, the unit certification will be issued by the attending Surveyor upon completion of all required surveys and tests. Where the attendance of the Surveyor is not required by the Rules, no unit certification is required.

At the discretion of the Surveyor, a unit-certification of this category may be credited to the annual audit, when conducted on or about its due date.

5.7.2 Issuance and Updating of Certificates *(2014)*

5.7.2(a) Issuance of Certificates (2017).

The certificates indicated in 1-1-A3/5.1.3, 1-1-A3/5.3.3 and 1-1-A3/5.5 will be issued initially for five years.

These certificates are renewable for another five-year period (from the expiry date of the previous certificate), subject to assessment of design and manufacturing in accordance with 1-1-A3/5.7.4. Failure for renewal of the manufacturing assessment certificate will cause invalidation of type approval certification at the end of the five-year period. Where for a practical reason the renewal process of any certificate cannot be completed before expiry of the five-year period, a short-term extension may be considered upon application. When the certificate is renewed within 90 days prior to its expiration date, the new certificate is to be valid from the expiration of the previous certificate.

These certificates will be updated in accordance with 1-1-A3/5.7.2(b) or 1-1-A3/5.7.2(c) where the design, Rules or Regulations used for certification is changed during the five years period. The updated certificate will be issued for five years from the date of the updating.

In addition, the following requirements will apply.

5.7.2(b) Changes to Design, Procedures and Regulations other than ABS Rules.

At any time, where there is a change in the design, procedures or the applicable standards (other than ABS Rules), the manufacturer is to endeavor to notify ABS of those changes with an application either for incorporation of the change for record purposes, or for re-assessment of the product, procedures and/or regulations, as the case may be. Failure to notify ABS about those changes may invalidate the certificate.

Unless the product is found or placed in compliance with the new requirement as a result of reassessment and where a specific implementation date is indicated in the change(s) to the Regulation adopted for the product, the certification will become invalid effective on the implementation date of the new regulation or the end of the five year period whichever comes first, unless the product is found or placed in compliance with the new requirement as a result of reassessment.

The foregoing requirements on changes to other regulations will generally apply to the changes to ABS Rules shown on the Design Assessment Certificate.

The listing on the ABS website will be replaced by the new listing upon completion of the updating, which is to be effected within the five year period shown on the certificate.

Unless the product is found or placed in compliance with the new requirement as a result of reassessment and where a retroactive application of the change(s) to ABS Rules is required and their implementation date is specified, the certification will become invalid effective on the specified implementation date or the end of the five year period whichever comes first.

5.7.2(c) Website Entry.

When the Product Type Approval becomes invalid due to overdue manufacturing audits, the products on the ABS website will be removed from the PTA index and placed on the PDA index provided that the design assessment certification is still valid.

When the design assessment certification is withdrawn or expired, all related entries on the ABS website will be deleted at that point.

5.7.3 Acceptability of Type Approved Products

Unless a specific implementation date is indicated in the adopted Regulation [see 1-1-A3/5.7.2(b)] or a retroactive application of the Rule change is required [see 1-1-A3/5.7.2(c)], a type approved product may be accepted for use on a vessel, MODU or facility classed or to be classed with ABS provided its type approval is valid at the time of the new construction contract of the vessel, MODU or facility.

If the implementation of change to Rules or Regulation is based on the keel laying date, then a type approved product with type approval valid at the time of keel laying of the vessel, MODU or facility will be acceptable.

5.7.4 Renewal

For renewal of certificates, the manufacturer is to inform ABS of any change to the product design, and the following are to be conducted, as appropriate:

i) Re-evaluate the product design in accordance with 1-1-A3/5.1, to update and verify if there is a design or specification change or a change to the applicable Rules or standards; and

ii) Re-audit the quality plan in accordance with 1-1-A3/5.3.3 or 1-1-A3/5.5; and

iii) Verify by survey that a valid quality assurance system has been maintained in accordance with 1-1-A3/5.3 or 1-1-A3/5.5.

Where the manufacturer is on semi-annual or closer audit, the renewal audit for Manufacturing Assessment Certificate may be specially considered.

5.7.5 Overdue Audit *(2014)*

When a periodic (renewal, annual or closer) audit is not completed within 90 days after the anniversary date of the Manufacturing Assessment Certificate (for renewal or annual audit) or within 90 days after the due date (where a closer interval is specified), the entry in the ABS website will be removed from the PTA index and placed on the PDA index if the PDA is still valid and, therefore, the Confirmation of Type Approval is deemed suspended.

5.9 Terms and Conditions of the Request for Product Type Approval and Agreement *(2010)*

5.9.1 Agreement *(2014)*

Unless otherwise agreed in writing, all services rendered and certificates issued in connection with Type Approval are governed by the terms and conditions of this section (1-1-A3/5.9) and of the "Request for Product Type Approval and Agreement" (together the "Agreement"). The Product Design Assessment of record will be the English version published on the ABS website www.typeapproval.org. By requesting product type approval, the Client agrees to be bound by these terms and conditions, and the Client accepts that the details of the product, which may contain commercially relevant data, will be published on the ABS web site and the Client understands and agrees to the publishing.

5.9.2 Representation as to Product Type Approval *(2014)*

A Confirmation of Product Type Approval represents that the product design meets the ABS Rules or Guides, statutory, industrial or manufacturer's standard described on the Design Assessment Certificate and that the manufacturer has established a systematic quality monitoring system sufficient to show its capacity to consistently manufacture a product which meets the designated standards. ABS is not a substitute for the independent judgment of professional designers or engineers nor a substitute for the quality control procedures of constructors, steel makers, suppliers, manufacturers and vendors of marine structures, materials, machinery or equipment. ABS represents solely to the manufacturer or other client of ABS that it will use due diligence in developing Rules, Guides and standards and in using normally applied testing standards, procedures and techniques in surveying the manufacturing facility or construction site as called for by ABS criteria for type approval.

5.9.3 Suspension of Certification *(1 July 2021)*

Any of the following events will cause immediate suspension of the certificate of product type approval unless the change is submitted to ABS for a new review and audit.

a) Redesign of the product or products covered by a Design Assessment certificate;

b) Change in production methods;

c) Substantial change in management organization;

d) Substantial change in frequency or curriculum for personnel training;

e) Refusing access to ABS personnel for periodic or annual audits;

f) Failure to correct a non- compliance identified during an audit or in service;

g) Failure to maintain ISO certification, or equivalent, for the facility(ies) for Manufacturing Assessment

h) Failure to pay ABS fees.

i) Changing or modifying a certificate.

5.9.4 Validity *(2014)*

The validity, applicability and interpretation of a certificate issued under the terms of or in contemplation of ABS Type Approval are governed by the Rules, Guides and standards of ABS which shall remain the sole judge thereof. Nothing contained in a Design Assessment or Manufacturing Assessment Certificate or in any report issued in contemplation of such a Certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator, insurer, or other entity of any duty to inspect or any other duty or warranty express or implied, nor create any interest, right, claim or benefit in any third party. Nothing expressed herein or in any Certificate or report issued under these Rules is intended or shall be construed to give any person, firm or corporation other than the parties hereto, any right, remedy,

or claim hereunder or under any provisions herein contained; all provisions hereof are for the sole and exclusive benefit of the parties hereto.

5.9.5 Disagreement

Any disagreement regarding either the proper interpretation of the Rules or translation of the Rules from the English language edition is to be referred to ABS for resolution.

5.9.6 Limitation *(2014)*

ABS makes no representations beyond those contained herein and in the provisions of the Agreement regarding its reports, statements, plan review, surveys, certificates or other services. Except as otherwise specifically set out in this Agreement, neither ABS nor any of its officers, committees, directors, employees, subcontractors, or agents shall be liable for any loss, damage, or expense of whatever type or kind sustained by any person due to any act, omission or error of any nature caused by ABS, its officers, committees, directors, employees, subcontractors, or agents, or due to any inaccuracy of any nature, even if held to amount to a breach of warranty.

5.9.7 Hold Harmless *(2014)*

Client, or its assignee or successor in interest, agree to release ABS and all ABS officers, directors, employees, subcontractors and agents (collectively "ABS Representatives"), and to indemnify and hold harmless ABS and ABS Representatives against any and all claims, demands, lawsuits, or actions for damages, including legal fees, to persons and/or property, tangible, intangible, or otherwise which may be brought against ABS or ABS Representatives incidental to, arising out of or in connection with the Agreement, the work to be done, the services to be provided or material to be furnished under ABS certificates, except for those claims caused solely and completely by the negligence of ABS or ABS Representatives.

Any other individual, corporation, partnership, limited liability company, or other entity who in any way participates in, is engaged in connection with or is a beneficiary of, any portion of the services described herein shall also release ABS and all ABS Representatives and shall indemnify and hold ABS and all ABS Representatives harmless from and against all claims, demands, lawsuits or actions for damages, including legal fees, to persons and/or property, tangible, intangible or otherwise, which may be brought against ABS or ABS Representatives by any person or entity as a result of the services performed pursuant to this Agreement, except for those claims caused solely and completely by the negligence of ABS or ABS Representatives.

5.9.8 Arbitration *(2014)*

Any and all differences and disputes of whatsoever nature arising out of this Agreement shall be put to arbitration in the City of New York pursuant to the laws relating to the arbitration there in force, before a board of three persons, consisting of one arbitrator to be appointed by ABS, one by Client, and one by the two so chosen. The decision of any two of the three on any point or points shall be final. Subject to 1-1-A3/5.9.9 until such time as the arbitrators finally close the hearings either party shall have the right by written notice served on the arbitrators and on an officer of the other party to specify further disputes or difference under this Agreement for hearing and determination. The arbitration is to be conducted in accordance with the rules of the Society of Maritime Arbitrators, Inc. in the English language. The governing law shall be the law of the State of New York, U.S.A. The arbitrators may grant any relief which they, or a majority of them, deem within the scope of the agreement of the parties, including, but not limited to, specific performance. Awards made in pursuance to this clause may include costs including a reasonable allowance for attorney's fees and judgment may be entered upon any award made hereunder in any court having jurisdiction. ABS and Client hereby mutually waive any and all claims to punitive damages in any forum.

Client shall be required to notify ABS within thirty (30) days of the commencement of any arbitration or any other legal proceeding between it and third parties which may concern ABS's

work in connection with this Agreement and shall afford ABS an opportunity, at ABS's sole option, to participate in the arbitration or legal proceeding.

5.9.9 Time Bar to Legal Action *(2014)*

Any statutes of limitation notwithstanding, Client expressly agrees that its right to bring or to assert against ABS any and all claims, demands or proceedings whether in arbitration or otherwise shall be waived unless (a) notice is received by ABS within ninety (90) days after Client had notice of or should reasonably have been expected to have had notice of the basis for such claims; and (b) arbitration or legal proceedings, if any, based on such claims or demands of whatever nature are commenced within one (1) year of the date of such notice to ABS.

5.9.10 Limitation of Liability *(2014)*

If Client, any licensee, subcontractor or anyone claiming through, or in the name of Client relies on any information or advice given by ABS or ABS Representatives and suffers loss, damage or expense directly thereby which is proven to have been caused by the negligent act, omission or error of ABS, ABS Representatives or from any breach of any implied or express warranty of workmanlike performance in connection with the services, or from any other reason, then the combined liability of ABS or ABS Representatives to Client or any other person, corporation, partnership, business entity, sovereign, country or nation, will be limited to the greater of a) $100,000 or b) an amount equal to ten (10) times the sum actually paid for the services alleged to be deficient.

The limitation of liability may be increased up to an amount twenty-five (25) times that sum paid for services alleged to be deficient upon receipt of Client's written request at or before the time of performance of those services and upon payment by Client of an additional fee of $10 for every $1,000 increase in the aggregate limitation of liability for all services.

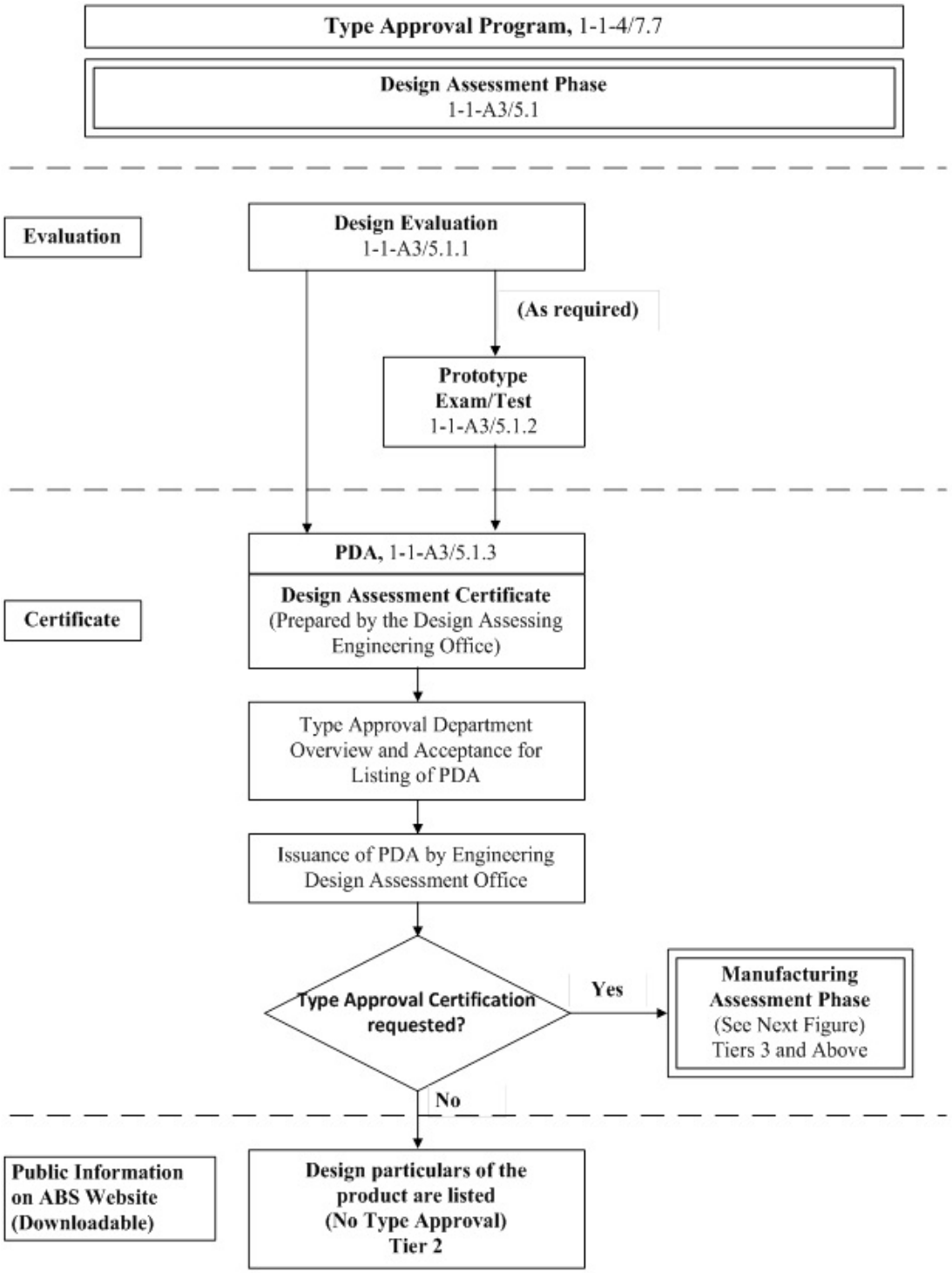
Neither ABS nor ABS Representatives shall in any circumstances be liable for indirect or consequential loss or damage (including, but without limitation, loss of profit, loss of contract, or loss of use) suffered by any person including Client from any failure by ABS in the performance of its obligations under this Agreement. Under no circumstances whatsoever shall any individual who may have personally caused the loss, damage or expense be held personally liable.

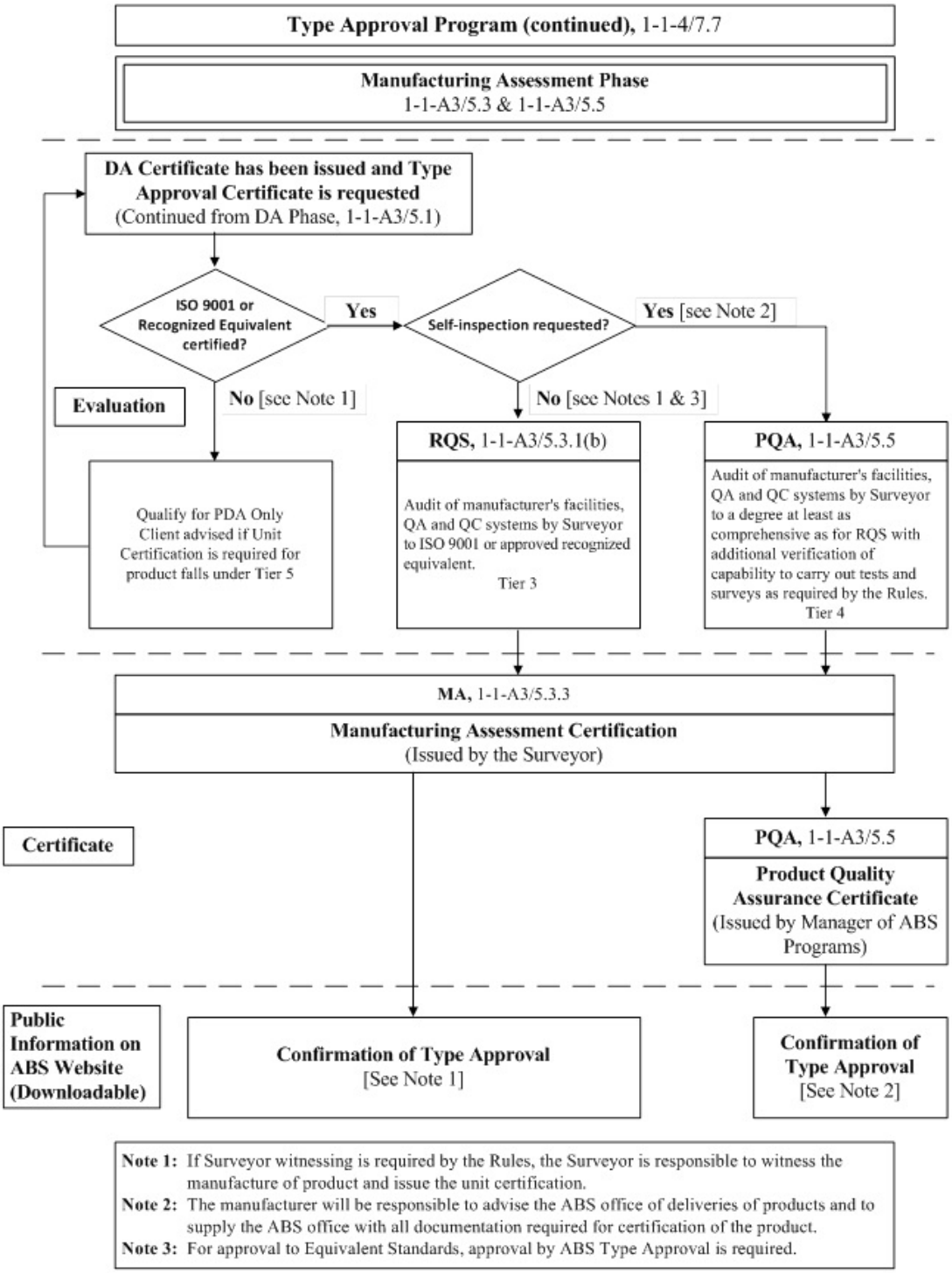
5.9.11 Scope of Certification

Nothing contained in any certificate, design assessment, manufacturing assessment, confirmation of type approval, or report is to be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator, insurer or other entity or person of any duty to inspect or any other duty or warranty, expressed or implied. Any certificate, design assessment, manufacturing assessment, confirmation of type approval or report evidences only that at the time of the review or audit the material, component, product or system, or any other item covered by a certificate, design assessment, manufacturing assessment, or report complied with one or more of the Rules, Guides, standards or other criteria of ABS, or, where there is no ABS standard, complied with the industry or manufacturer's standard specified in the Type Approval listing on the ABS Type Approval website. Any listing or certificate is issued solely for the use of ABS, its committees, its clients or other authorized entities. Nothing contained in any listing, certificate, design assessment, manufacturing assessment, confirmation of type approval or report is to be deemed in any way a representation or statement beyond those contained in 1-1-A3/5.9.2 above. ABS is not an insurer or guarantor of the integrity, safety or suitability of a vessel or of the material, components, products, systems, equipment, machinery and other items incorporated in it. The validity, applicability and interpretation of any certificate, report, plan or document review or approval are governed by the Rules, Guides, standards or other criteria of ABS who shall remain the sole judge thereof. ABS is not responsible for the consequences arising from the use by other parties of the Rules, Guides, standards or other criteria of ABS, without review, plan approval and survey by ABS.

The term "approved" shall be interpreted to mean that the plans, reports or documents have been reviewed for compliance with one or more of the Rules, Guides, standards or other criteria acceptable to ABS.

FIGURE 1
Process of the Type Approval Program *(2014)*




Type Approval Program (continued), 1-1-4/7.7
Manufacturing Assessment Phase
1-1-A3/5.3 & 1-1-A3/5.5
DA Certificate has been issued and Type Approval Certificate is requested
(Continued from DA Phase, 1-1-A3/5.1)
ISO 9001 or Recognized Equivalent certified?
Yes
Self-inspection requested?
Yes [see Note 2]
Evaluation
No [see Note 1]
No [see Notes 1 & 3]
Qualify for PDA Only
Client advised if Unit Certification is required for product falls under Tier 5
RQS, 1-1-A3/5.3.1(b)
Audit of manufacturer's facilities, QA and QC systems by Surveyor to ISO 9001 or approved recognized equivalent.
Tier 3
PQA, 1-1-A3/5.5
Audit of manufacturer's facilities, QA and QC systems by Surveyor to a degree at least as comprehensive as for RQS with additional verification of capability to carry out tests and surveys as required by the Rules.
Tier 4
MA, 1-1-A3/5.3.3
Manufacturing Assessment Certification
(Issued by the Surveyor)
Certificate
PQA, 1-1-A3/5.5
Product Quality Assurance Certificate
(Issued by Manager of ABS Programs)
Public Information on ABS Website (Downloadable)
Confirmation of Type Approval
[See Note 1]
Confirmation of Type Approval
[See Note 2]
Note 1: If Surveyor witnessing is required by the Rules, the Surveyor is responsible to witness the manufacture of product and issue the unit certification.
Note 2: The manufacturer will be responsible to advise the ABS office of deliveries of products and to supply the ABS office with all documentation required for certification of the product.
Note 3: For approval to Equivalent Standards, approval by ABS Type Approval is required.

PART 1

CHAPTER 1
Scope and Conditions of Classification

APPENDIX 4
Tiers of Approval

1 General *(1 July 2021)*

Tiers 1 – 5 will be used to categorize those materials, components, products and systems normally found in the construction of vessels, MODUs and facilities classed by ABS. The tiers segregate the requirements of machinery Unit Certification based on the basic requirements of the Rules for machinery. Tables 1 through 6 in Section 4-1-1, 4-2-1/15.11 TABLE 1 and Tables 1 through 3 in Section 4-4-1 of the *Marine Vessel Rules* also provide the applicability of the Type Approval Program for each of these items.

Tier 1 – Manufacturer's Certification (MC)

- Rules Require Manufacturer's Certification
- Self-Certification to a Recognized Standard
- No ABS Plan Review
- No unit certification required and no on-site Surveyor involvement
- No ABS Certificate Issued

Tier 2 – Plan Review or Product Design Assessment (PDA)

- Plan Review to Manufacturer's Standard and/or ABS Rules
- No unit certification required and no on-site Surveyor involvement
- ABS PDA Certificate may be issued for type approval program

Tier 3 – Type Approval (TA)[(1)] (PDA & MA)

- Product Design Assessment
  - Plan Review to ABS Rules and/or Statutory Requirements
  - And/or evaluation against recognized standard
  - PDA Certificate issued
- ABS Manufacturing Assessment
  - ISO 9001 Certification, or recognized equivalent, is mandatory
  - ABS Approved Manufacturing Procedure

  - Initial and Annual Audit of Plant by Surveyor
    - Manufacturing Assessment Certificate Issued
    - Confirmation of Type Approval Certificate Issued
- No unit certification required and no on site Surveyor involvement

Note:

1. Normally required for Life Saving and Fire Fighting Protection as detailed in SOLAS and other Flag Standards and Laws

Tier 4 – Product Certification via Product Quality Assurance (PQA)

- Applicable to Mass Produced Products
- Product Design Assessment (PDA)
- Plan Review to ABS Rules
  - May include evaluation against recognized standard
  - PDA Certificate issued
- ABS Manufacturing Assessment (MA)
  - ISO 9001 Certification, or recognized equivalent, is mandatory
  - ABS Approved Manufacturing Procedure
  - Initial and Annual Audits by Surveyor
    - Manufacturing Assessment Certificate Issued
    - Confirmation of Type Approval Certificate Issued
  - Initial and Semi-Annual Audits by Surveyor
    - Product Quality Assurance Certificate Issued
- Manufacturer provides necessary documents and issues declaration of conformity
  - Batch Inspection as necessary
- Unit Certification is required
- Individual Certificate and/or survey report issued by ABS Surveyor

Tier 5 – Unit Certification at the Plant of Manufacturer (UC)

- Plan Review or Product Design Assessment
  - Plan Review to ABS Rules
    - May also include evaluation against recognized standard
  - ABS PDA Certificate may be issued for type approval program
- Surveys at the Plant of Manufacturer
  - Unit certification is required
  - Surveyor attendance during fabrication
  - Witness inspections/material testing per applicable ABS Rules
  - Individual Certificate and/or survey report issued by ABS Surveyor

PART 1

CHAPTER 2

Classification Requirements for Steel Vessels Under 90 Meters (295 Feet) in Length

CONTENTS

PART 1

CHAPTER 2

Classification Requirements for Steel Vessels Under 90 Meters (295 Feet) in Length

SECTION 1

Classification *(1 January 2008)*

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to steel vessels under 90 meters (295 feet) in length are contained in the following Sections of this Chapter.

PART 1

CHAPTER 2

Classification Requirements for Steel Vessels Under 90 Meters (295 Feet) in Length

SECTION 2

Classification Symbols and Notations *(1 July 2015)*

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

Notations for specific vessel types are given in each Chapter of Part 5C of the *Marine Vessel Rules*.

PART 1

CHAPTER 2

Classification Requirements for Steel Vessels Under 90 Meters (295 Feet) in Length

SECTION 3

Rules for Classification *(1 January 2008)*

1 Application of Rules *(2018)*

The ABS *Rules for Building and Classing Marine Vessels (Marine Vessel Rules)* are applicable to self-propelled steel vessels under 90 meters (295 feet) in length intended for unrestricted ocean service, except where specifically mentioned otherwise. Oil Carriers, Chemical Carriers, Gas Carriers, Ore Carriers, Bulk Carriers, Towing Service Vessels, Fire Fighting Vessels, Offshore Support Vessels, Oil Recovery Vessels, and Safety Standby Service Vessels, etc., are to be in accordance with the requirements of Part 5C or 5D of the *Marine Vessel Rules*.

Where reference is made herein to the *Marine Vessel Rules*, the latest edition of those Rules is intended.

These requirements are applicable to those features that are permanent in nature and can be verified by plan review, calculation, physical survey or other appropriate means. Any statement in the Rules regarding other features is to be considered as guidance to the designer, builder, Owner, et al.

PART 1

CHAPTER 2

Classification Requirements for Steel Vessels Under 90 Meters (295 Feet) in Length

SECTION 4

Submission of Plans

(2011) Hull and machinery plans, as required below, are to be submitted to ABS for review and approval. Plans from designers and shipbuilders should generally be submitted electronically. However, hard copies will also be accepted. All plan submissions originating from manufacturers are understood to be made with the cognizance of the shipbuilder. A fee may be charged for the review of plans for which there is no contract of classification.

1 Hull Plans

Plans showing the arrangements, scantlings, details of principal parts of the hull structure and welding details of each vessel to be built under survey are to be submitted and approved before construction is commenced. These plans are to include such particulars as the design draft and design speed. Where provision is to be made for any special type of cargo or for any exceptional conditions of loading, particulars of the weights and of their distribution are also to be given. In general, the following plans are to be submitted for review or reference.

- Anchor handling arrangements
- Bottom construction, floors, girders, etc.
- Bow framing
- Capacity plan
- Damage Control plan
- Deck plans
- Framing plan
- General Arrangement
- Hatches and hatch-closing arrangements
- Inner bottom plating
- Lines and body plan
- Machinery casings, engine and main auxiliary foundations
- Midship section
- Miscellaneous non-tight bulkheads which are used as structural supports

- Pillars and girders
- Scantling profile and decks
- Shaft struts
- Shaft tunnels
- Shell expansion
- Stem
- Stern frame and rudder
- Stern framing
- Superstructure and deckhouses, and their closing arrangements
- Ventilation systems on weather decks
- Vessel Specifications
- Watertight and deep-tank bulkheads
- Welding Schedule

3 Machinery Plans and Data *(2018)*

Plans and data required to be submitted to ABS for review and approval are listed in Part 4 of the *Marine Vessel Rules*.

5 Additional Plans

Where certification under 1-1-5/3 or 1-1-5/5 is requested, submission of additional plans and calculations may be required.

PART 1

CHAPTER 3

Classification Requirements for Offshore Support Vessels

CONTENTS

PART 1

CHAPTER 3
Classification Requirements for Offshore Support Vessels

SECTION 1
Classification

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to offshore support vessels are contained in the following Sections of this Chapter.

SECTION 2
Classification Symbols and Notations

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

The following notations are specific to the various types of offshore support vessels included in the *Marine Vessel Rules*.

1 Vessels Intended for Offshore Support Services

See also Part 5D, Chapter 1 of the *Marine Vessel Rules*.

1.1 Class Notations

In accordance with 1-1-3/3, the classification ⊠**A1 Offshore Support Vessel** will be assigned to vessels primarily designed for offshore support services and built to the applicable requirements in Part 3, Part 4, at least one specialized functional service of Part 5D, and other relevant sections of the *Marine Vessel Rules*. Vessels that have been designed, built and equipped for a specialized functional service will be assigned the appropriate notation, as described in this Section.

Vessels intended for several functional services covered by the *Marine Vessel Rules* may be assigned a combination of the class notations described in this Section, provided that the specific requirements for each intended service are complied with and the vessels are equipped and prepared at all times to engage in operations related to the relevant functional services. (See 1-3-2/3).

1.3 Dual and Multi-Function Services

Where a vessel is equipped for dual or multi-function services, the appropriate class notations may be assigned. For example, an Offshore Support Vessel equipped for safety standby and towing may be assigned the classification ⊠**A1 Offshore Support Vessel (SSR, GR A – (N), TOW)** or capable of anchor handling, towing and supply may be assigned the classification ⊠**A1 Offshore Support Vessel (AH, Supply, TOW)**. Other combinations of class notations described may be assigned corresponding to the functional and service capabilities of the vessel for which it has been approved as described in 5D-1-1 of the *Marine Vessel Rules*.

In such instances, the dual or multipurpose vessel is to be designed and built to the applicable requirements of Part 5D of the *Marine Vessel Rules* for the particular services.

1.5 Special Purpose *(2013)*

See also 5D-1-2 of the *Marine Vessel Rules*.

Upon the Owner's request, Offshore Support Vessels that comply with the requirements in 5D-1-2 of the *Marine Vessel Rules* and the IMO Code of Safety for Special Purpose Ships (SPS Code) may be assigned the class notation **SPS**.

For example, an offshore support vessel engaged in pipe laying operations and complying with requirements of this Section and the SPS Code will be assigned the classification **⊠A1 Offshore Support Vessel (Pipe Lay), SPS**.

1.7 Domestic Service *(2013)*

See also 5D-1-3 of the *Marine Vessel Rules*.

Upon the Owner's request, Offshore Support Vessels that comply with the requirements in 5D-1-3 of the *Marine Vessel Rules* may be assigned the class notation **(Operational Area) Domestic Service**.

For example, an offshore support vessel engaged in anchor handling, supply and towing operations and complying with requirements of 5D-1-3 of the *Marine Vessel Rules* will be assigned the classification **⊠A1 Offshore Support Vessel (AH, Supply, TOW), U.S. Domestic Service**.

1.9 Strengthening for Heavy Cargoes *(2013)*

See also 5D-1-4 of the *Marine Vessel Rules*.

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the additional classification **HDC(P, Locations)** will be assigned to vessels designed with strengthening for carriage of heavy deck cargoes exceeding 25.66 KN/m^2 (2617 kgf/m^2, 536 lbf/ft^2), and built to the requirements in 5D-1-4/3 and other relevant sections of the *Marine Vessel Rules*. For example, an offshore support vessel engaged in anchor handling, supply and towing operations, strengthened for deck cargo of 5 t/m^2 at main deck and complying with requirements of 5D-1-4 of the *Marine Vessel Rules*. will be assigned the classification **⊠A1 Offshore Support Vessel (AH, Supply, TOW) HDC(5 t/m^2, main deck).**

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the additional classification **HLC(ρ, Tanks)** will be assigned to vessels designed with strengthening for carriage of heavy liquid cargoes with specific gravity exceeding 1.05, and built to the requirements in 5D-1-4/5 and other relevant sections of the *Marine Vessel Rules*. For example, an offshore support vessel engaged in anchor handling, supply and towing operations, strengthened for heavy liquid cargo of specific gravity 2.5 in tanks 3 and 5, and complying with requirements of 5D-1-4 of the *Marine Vessel Rules* will be assigned the classification **⊠A1 Offshore Support Vessel (AH, Supply, TOW) HLC(2.5,Tanks 3 and 5).**

3 Offshore Supply

See also Part 5D, Chapter 2 of the *Marine Vessel Rules*.

3.1 Class Notation

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification **⊠A1 Offshore Support Vessel (Supply)** will be assigned to vessels designed primarily for supply service to offshore installations, and built to the requirements of Part 5D, Chapter 2 and other relevant sections of the *Marine Vessel Rules*.

3.3 Carriage of Limited Amounts of Hazardous and Noxious Liquid Substances

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification **⊠A1 Offshore Support Vessel (Supply-HNLS)** will be assigned to vessels designed primarily for supply service to offshore installations, with capability for carriage of limited amounts of hazardous and

noxious liquid substances, and built to the requirements of Part 5D, Chapter 3 and other relevant sections of the *Marine Vessel Rules*.

5 Anchor Handling and Towing

See also Part 5D, Chapter 3 of the *Marine Vessel Rules*.

5.1 Anchor Handling

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification ✠**A1 Offshore Support Vessel (AH)** will be assigned to vessels designed and equipped for anchor handling operations and built to the requirements of Part 5D, Chapter 3 and other relevant sections of the *Marine Vessel Rules*.

5.3 Towing

The classification ✠**A1 Offshore Support Vessel (TOW)** will be assigned to vessels designed and equipped for towing operations and built to the requirements of Part 5D, Chapter 3 and other relevant sections of the *Marine Vessel Rules*.

7 Fire Fighting

See also Part 5D, Chapter 4 of the *Marine Vessel Rules*.

7.1 FFV 1

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification ✠**A1 Offshore Support Vessel (FFV 1)** will be assigned to vessels with water spray protection for cooling the Fire Fighting Vessel's surfaces to enable close operation for early stages of fire fighting and rescue operations, with capabilities in accordance with 5D-4-1/3.5 TABLE 1 of the *Marine Vessel Rules*, built in compliance with the requirements of Part 5D, Chapter 4 and other relevant sections of the *Marine Vessel Rules*.

For vessels built in compliance with all the requirements for **FFV 1** without water spray protection, the classification ✠ **A1 Offshore Support Vessel (FFV 1-NS)** will be assigned, indicating the vessel is provided with the same firefighting capabilities as **FFV 1** in accordance with 5D-4-1/3.5 TABLE 1, but not equipped for close operation during early stages of firefighting and rescue operations.

7.3 FFV 2 or FFV 3

Where the vessel has been built in compliance with the requirements of Part 5D, Chapter 4 and for continuous fighting of large fires and cooling structures on fire, with capabilities in accordance with 5D-4-1/3.5 TABLE 1 of the *Marine Vessel Rules*, and other relevant sections of the *Marine Vessel Rules*, the classification ✠**A1 Offshore Support Vessel (FFV 2) or (FFV 3)** will be assigned.

7.5 FFV 1 and 2 or FFV 1 and 3

Where ✠ **A1 Offshore Support Vessel (FFV 2) or (FFV 3)** also meet requirements for **FFV 1**, the Class notation ✠**A1 Offshore Support Vessel (FFV 1 and 2)**, or ✠**A1 Offshore Support Vessel (FFV 1 and 3)** may be given.

7.7 Vessels with Fire Fighting Capability

Vessels not in full compliance with these Rules or not specifically built for the service intended to be covered by the *Marine Vessel Rules*, but which have some fire fighting capability in addition to their regular service, may be considered and reviewed under the intent of the *Marine Vessel Rules*, in relation to the specific fire fighting requirements. Such vessels complying with these requirements may be distinguished in the *Record* with their assigned notation followed by the designation (**FF Capable**), such

as ✠**A1 Offshore Support Vessel (FF Capable)**, with detailed data on the extent of this capability entered into the *Record*. Such special fire fighting systems will be subject to annual surveys.

9 Diving and Remotely Operated Vehicles (ROVs) Support

See also Part 5D, Chapter 5 of the *Marine Vessel Rules*.

9.1 Vessels Intended to Support Air Diving Systems

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the Class notation ✠**A1 Offshore Support Vessel (DSV AIR)** will be assigned to vessels intended to support air diving systems (see 5D-5-1/3.3 TABLE 1 of the *Marine Vessel Rules*) and complying with the applicable requirements of Part 5D, Chapter 5 and other relevant sections of the *Marine Vessel Rules*.

9.3 Vessels Intended to Support Mixed Gas Diving Systems

The Class notation ✠**A1 Offshore Support Vessel (DSV MIXED-GAS)** will be assigned to vessels intended to support mixed-gas diving systems (see 5D-5-1/3.3 TABLE 1 of the *Marine Vessel Rules*) and complying with the applicable requirements of Part 5D, Chapter 5 and other relevant sections of the *Marine Vessel Rules*.

9.5 Vessels Intended to Support Saturation Diving Systems

The Class notation ✠**A1 Offshore Support Vessel (DSV SAT)** will be assigned to vessels intended to support saturation diving systems (see 5D-5-1/3.3 TABLE 1 of the *Marine Vessel Rules*) and complying with the applicable requirements of Part 5D, Chapter 5 and other relevant sections of the *Marine Vessel Rules*.

9.7 Vessels Intended to Support Multiple Diving Systems

Vessels that are intended to support multiple diving systems and complying with the applicable requirements of Part 5D, Chapter 5 and other relevant sections of the *Marine Vessel Rules* will be assigned the Class notation ✠**A1 Offshore Support Vessel (DSV)** followed by the appropriate notations for the diving systems. For example, vessels intended to support air and saturation diving systems may be assigned the Class notation ✠**A1 Offshore Support Vessel (DSV AIR/SAT)**.

9.9 ROV Support Vessels

The Class notation ✠**A1 Offshore Support Vessel (ROV)** will be assigned to vessels intended to support Remote Operated Vehicle – ROV (see 5D-5-1/3.3 TABLE 1 of the *Marine Vessel Rules*) and complying with the applicable requirements of Part 5D, Chapter 5 and other relevant sections of the *Marine Vessel Rules*.

ROVs and their associated support systems (handling systems, control stations, etc.) installed on ROV support vessels are to be Classed by ABS or another IACS member Classification Society. ABS Classed ROVs and support components are to meet the requirements of the ABS *Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities*.

9.11 Vessels with Diving Support and/or ROV Capability *(2013)*

Vessels, other than those in 1-3-2/9.1 through 1-3-2/9.9 above, having some diving and/or ROV support capability in addition to their regular service, may be considered and reviewed in accordance with 5D-5-5 of the *Marine Vessel Rules*, in relation to the specific diving and/or ROV support requirements. Such vessels complying with these requirements may be distinguished in the *Record* with their assigned notation followed by the designation (**DSV Capable**) and/or (**ROV Capable**), such as ✠**A1 Offshore Support Vessel (DSV Capable)**, with detailed data on the extent of this capability entered into the *Record*. Such special diving and/or ROV support systems will be subject to annual surveys.

11 Oil Spill Recovery *(2013)*

See also Part 5D, Chapter 6 of the *Marine Vessel Rules*.

11.1 Oil Spill Recovery – Standby Class 1

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification **✠A1 Offshore Support Vessel (OSR-S1)** will be assigned to vessels intended for recovery of oil from the water and shorelines in response to an oil spill in the marine environment, and built in compliance with these requirements for recovery of oil of unknown flash points and outfitted for the same in accordance with 5D-6-3 and 5D-6-4 and other relevant sections of the *Marine Vessel Rules*, and approved for oil recovery service at the assigned freeboard.

11.3 Oil Spill Recovery – Standby Class 2

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification **✠A1 Offshore Support Vessel (OSR-S2)** will be assigned to vessels intended for recovery of oil from the water and shorelines in response to an oil spill in the marine environment, and built in compliance with these requirements for recovery of oil having a flash point exceeding 60°C (140°F) and outfitted for the same in accordance with 5D-6-6 and other relevant sections of the *Marine Vessel Rules*, and approved for oil recovery service at the assigned freeboard.

11.5 Oil Spill Recovery – Capability Class 1

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification **✠A1 Offshore Support Vessel (OSR-C1)** will be assigned to vessels built in compliance with these requirements for recovery of oil of unknown flash points but not outfitted for the same in accordance with 5D-6-5 and other relevant sections of the *Marine Vessel Rules*, and approved for oil recovery service at the assigned freeboard.

11.7 Oil Spill Recovery – Capability Class 2

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification **✠A1 Offshore Support Vessel (OSR-C2)** will be assigned to vessels intended for recovery of oil from the water and shorelines in response to an oil spill in the marine environment, and built in compliance with these requirements for recovery of oil having a flash point exceeding 60°C (140°F) but not outfitted for the same in accordance with 5D-6-7 and other relevant sections of the *Marine Vessel Rules*, and approved for oil recovery service at the assigned freeboard.

13 Safety Standby Rescue

See also Part 5D, Chapter 7 of the *Marine Vessel Rules*.

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification **✠A1 Offshore Support Vessel (SSR)** will be assigned to vessels which have been adapted and have special features for evacuation, reception, rescue and care of persons from another vessel at sea or an offshore installation, and built in accordance with the requirements of Part 5D, Chapter 7 and other relevant sections of the *Marine Vessel Rules*, and approved for safety standby service at the assigned freeboards. In addition an entry will be made in the *Record*, indicating the class designation together with the number of survivors the vessel has been certified to accommodate [e.g., **GR A – (320)**, **GR B – (250)**, **GR C – (15)**, etc.].

15 Pipe Laying

See also Part 5D, Chapter 8 of the *Marine Vessel Rules*.

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification **✠A1 Offshore Support Vessel (Pipe Lay)** will be assigned to vessels designed and equipped for the

installation of subsea pipelines and built in compliance with the requirements of Part 5D, Chapter 8 and other relevant sections of the *Marine Vessel Rules*.

17 Heavy Lift

See also Part 5D, Chapter 9 of the *Marine Vessel Rules*.

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the notation **✠A1 Offshore Support Vessel (Heavy Lift)** will be assigned to vessels intended for the lifting of heavy loads in oil drilling and production operations, offshore construction and/or salvage operations, with a lifting capacity of 160 metric tons and above and built in compliance with the requirements of Part 5D, Chapter 9 and other relevant sections of the *Marine Vessel Rules*.

The above notation will be assigned to purpose-built vessels having all heavy lifting equipment permanently installed and classified by ABS. Such vessels will be distinguished in the *Record* with their assigned notation and information on the heavy lifting capabilities. Heavy lifting equipment will be subject to the annual surveys.

19 Well Intervention

See also Part 5D, Chapter 10 of the *Marine Vessel Rules*.

19.1 Classed Well Intervention Systems

Vessels fitted with permanent well intervention systems that comply with 5D-10-4 of the *Marine Vessel Rules* will be assigned the classification **✠A1 Offshore Support Vessel (WI)**.

19.3 Unclassed Well Intervention Systems

Vessels with well intervention systems installed on board and not assigned with notation **WI** are to comply with the requirements of 5D-10-3 of the *Marine Vessel Rules*. In this case, no class notation related to well intervention systems will be assigned to the vessel.

19.5 Well Intervention Ready

Vessels designed to be "well intervention ready" that comply with 5D-10-2 of the *Marine Vessel Rules* will be assigned the classification **✠A1 Offshore Support Vessel (WI-READY)**.

21 Well Stimulation *(2013)*

See also Part 5D, Chapter 11 of the *Marine Vessel Rules*.

21.1 Classed Well Stimulation Systems

Vessels fitted with permanent well stimulation systems that comply with the relevant Sections in Part 5D, Chapter 11 of the *Marine Vessel Rules* will be assigned the classification **✠A1 Offshore Support Vessel (WS)**.

21.3 Unclassed Well Stimulation Systems

Vessels with well stimulation systems installed on board and not assigned with notation **WS** are to comply with the minimum requirements of 5D-11-7 of the *Marine Vessel Rules*. In this case, no class notation related to well stimulation systems will be assigned to the vessel.

21.5 Well Stimulation Ready

Vessels designed to be "well stimulation ready" that comply with 5D-11-6 of the *Marine Vessel Rules* will be assigned the classification **✠A1 Offshore Support Vessel (WS-READY)**.

23 Well Test

See also Part 5D, Chapter 12 of the *Marine Vessel Rules*.

23.1 Classed Well Test Systems

Vessels fitted with permanent well test systems that comply with the requirements of Part 5D, Chapter 12 of the *Marine Vessel Rules* will be assigned the classification ✠**A1 Offshore Support Vessel (Well Test Service)**.

23.3 Unclassed Well Test Systems

Vessels with well test systems installed on board and not assigned with notation **WT** are to comply with the requirements of Section 5D-12-3 of the *Marine Vessel Rules*. In this case, no class notation related to well testing systems will be assigned to the vessel.

23.5 Well Test Ready

Vessels designed to be "well test ready" that comply with the requirements of Section 5D-12-2 of the *Marine Vessel Rules* will be assigned the classification ✠**A1 Offshore Support Vessel (WT-READY)**.

25 Escort

See also Part 5D, Chapter 13 of the *Marine Vessel Rules*.

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification ✠**A1 Offshore Support Vessel (Escort)** will be assigned to vessels intended for escort service (i.e. accompanying another vessel in transit) and designed and built to the requirements of Part 5D, Chapter 13 and other relevant sections of the *Marine Vessel Rules*.

27 Wind Turbine Installation, Maintenance and Repair (Wind-IMR)

See also Part 5D, Chapter 14 of the *Marine Vessel Rules*.

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification ✠**A1 Offshore Support Vessel (Wind IMR)** will be assigned to vessels intended for the installation, maintenance and repair of wind turbines and designed and built to the applicable requirements of Part 5D, Chapter 14 and other relevant sections of the *Marine Vessel Rules*.

29 Cable Laying *(2013)*

See also Part 5D, Chapter 15 of the *Marine Vessel Rules*.

In accordance with 1-1-3/3 of these Rules and 5D-1-1/5.1 of the *Marine Vessel Rules*, the classification ✠**A1 Offshore Support Vessel (Cable Lay)** will be assigned to vessels designed and equipped for the installation, maintenance and repair of underwater telecommunication cables and power transmission cables and built in compliance with the requirements of Part 5D, Chapter 15 and other relevant sections of the *Marine Vessel Rules*.

31 Subsea Service *(1 July 2019)*

See also Part 5D, Chapter 16 of the *Marine Vessel Rules*.

In accordance with 1-1-3/3 of the ABS *Rules for Conditions of Classification (Part 1)* and 5D-1-1/5.1 of these Rules, the classification ✠**A1 Offshore Support Vessel** (**Subsea Service**) will be assigned to vessels designed and equipped primarily for installation support, inspection, maintenance, repair and/or decommissioning of subsea systems which may include but are not limited to subsea trees, wellheads, manifolds, equipment and facilities/structures, and built in compliance with the requirements of Part 5D, Chapter 16 and other relevant sections of these Rules.

PART 1

CHAPTER 3

Classification Requirements for Offshore Support Vessels

SECTION 3

Rules for Classification

1 Application of Rules *(2018)* *(1 July 2019)*

The ABS *Rules for Building and Classing Marine Vessels (Marine Vessel Rules)* are applicable to offshore support vessels intended for unrestricted ocean service, except where specifically mentioned otherwise. Offshore support vessels engaged in providing services of Supply, Anchor Handling or Towing, Fire Fighting, Diving and Underwater Vehicles Support, Oil Spill Recovery, Safety Standby and Rescue, Pipe Laying, Heavy Lift, Well Intervention, Well Stimulation, Well Test, Escort, Wind Turbine Installation, Maintenance and Repair, and Subsea Service are to be in accordance with the applicable requirements of Part 5D of the *Marine Vessel Rules*.

Where reference is made herein to the ABS *Rules for Building and Classing Marine Vessels (Marine Vessel Rules)*, the latest edition of those Rules is intended.

These requirements are applicable to those features that are permanent in nature and can be verified by plan review, calculation, physical survey or other appropriate means. Any statement in the Rules regarding other features is to be considered as guidance to the designer, builder, Owner, et al.

SECTION 4
Submission of Plans

Hull and machinery plans, as required below, are to be submitted to ABS for review and approval. Plans from designers and shipbuilders should generally be submitted electronically. However, hard copies will also be accepted. All plan submissions originating from manufacturers are understood to be made with the cognizance of the shipbuilder. A fee may be charged for the review of plans for which there is no contract of classification.

1 Hull Plans

Plans showing the arrangements, scantlings, details of principal parts of the hull structure and welding details of each vessel to be built under survey are to be submitted and approved before construction is commenced. These plans are also to include such particulars as the design draft and design speed. Where provision is to be made for any special type of cargo or for any exceptional conditions of loading, particulars of the weights and of their distribution are also to be given. In general, the plans as specified in 1-1-7/1 are to be submitted for review or reference.

3 Machinery Plans and Data *(2018)*

Plans and data required to be submitted to ABS for review and approval are listed in Part 4 of the *Marine Vessel Rules*.

5 Additional Plans *(1 July 2019)*

Additional plans to be submitted specific to the type of vessel are given in Part 5D of the *Marine Vessel Rules*, as follows:

Special Purpose	5D-1-2/1.7
Offshore Supply	5D-2-1/7, 5D-2-3/7
Anchor Handling and Towing	5D-3-1/7
Fire Fighting	5D-4-1/5
Diving and ROV Support	5D-5-1/5
Oil Spill Recovery	5D-6-1/5
Safety Standby Rescue	5D-7-1/5
Pipe Laying	5D-8-1/5

Heavy Lift	5D-9-1/7
Well Intervention	5D-10-1/9
Well Stimulation	5D-11-1/7
Well Test	5D-12-1/9
Escort	5D-13-2
Wind Turbine Installation, Maintenance and Repair	5D-14-1/7
Cable Laying	5D-15-1/5
Subsea Services	5D-16-1/7

Also, where certification under 1-1-5/3 or 1-1-5/5 is requested, submission of additional plans and calculations may be required.

PART 1

CHAPTER 4

Classification Requirements for Steel Vessels for Service on Rivers and Intracoastal Waterways

CONTENTS

PART 1

CHAPTER 4

Classification Requirements for Steel Vessels for Service on Rivers and Intracoastal Waterways

SECTION 1

Classification *(1 January 2008)*

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to steel vessels for service on rivers and intracoastal waterways are contained in the following Sections of this Chapter.

PART 1

CHAPTER 4

Classification Requirements for Steel Vessels for Service on Rivers and Intracoastal Waterways

SECTION 2

Classification Symbols and Notations *(1 January 2008)*

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

The following notations are specific to vessels intended for service on rivers or Intracoastal waterways.

1 River Service

Vessels which have been built to the satisfaction of the ABS Surveyors to the requirements of these Rules, where approved by the Committee, will be classed and distinguished in the *Record* by the symbols ✠**A1**, followed by the service limitation **River Service**.

3 Special Rules

Vessels which have been built to the satisfaction of the ABS Surveyors to the requirements as contained in the *River Rules* for special types of vessels and which are approved by the Committee will be classed and distinguished in the *Record* by the symbols ✠**A1** followed by appropriate notation and service limitation such as **Oil Tank Barge, River Service**, **Barge, River Service**, **Towing Vessel, River Service**, **Chemical Tank Barge, River Service**, **Passenger Vessel, River Service**, etc.

PART 1

CHAPTER 4

Classification Requirements for Steel Vessels for Service on Rivers and Intracoastal Waterways

SECTION 3

Rules for Classification *(1 January 2008)*

1 Application *(2018)*

The ABS *Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (River Rules)* have been developed for barges, towboats, cargo vessels and passenger vessels in service on major rivers and on connecting intracoastal waterways. The *River Rules* provide for certain features peculiar to this service such as push-towing, integrated tows consisting of barges in contact and frequent transiting of locks. However, they are intended to apply to and may be used in development of designs for vessels intended for service in other bodies of comparatively smooth water. These Rules are not intended to apply to vessels in service on the Great Lakes of North America, coastwise operation, or on any ocean. In the design of self-propelled vessels intended to carry dry or liquid cargoes, the arrangements and scantlings in way of the cargo spaces may be taken from the appropriate Sections for barges.

These requirements are applicable to those features that are permanent in nature and can be verified by plan review, calculation, physical survey or other appropriate means. Any statement in the Rules regarding other features is to be considered as a guidance to the designer, builder, owner, et al.

PART 1

CHAPTER 4

Classification Requirements for Steel Vessels for Service on Rivers and Intracoastal Waterways

SECTION 4

Submission of Plans

1 Hull Plans *(2011)*

Plans showing the scantlings, arrangements, and details of the principal parts of the hull structure of each vessel to be built under survey are to be submitted and approved before the work of construction is commenced. These plans are to indicate clearly the scantlings and details of welding, and they are to include, if applicable, such particulars as the design draft and design speed. Where provision is to be made for any special type of cargo or for any exceptional conditions of loading, whether in ballast or with cargo, particulars of the weights to be carried and of their distribution are also to be given. In general, the following plans are to be submitted for review or reference.

- Vessel Specifications
- General Arrangement
- Midship Section
- Scantling Profile
- Bottom Construction, Floors, Girders, etc.
- Framing
- Rake Framing
- Bow Framing
- Stem
- Inner Bottom
- Shell Plating
- Decks
- Trusses
- Pillars and Girders
- Watertight and Deep Tank Bulkheads
- Shaft Tunnels
- Machinery Casings, Boiler, Engine and Main Auxiliary Foundations

- Stern Framing
- Stern Frame and Rudder
- Shaft Struts
- Superstructures and Deckhouses
- Hatches and Hatch-Closing Arrangements
- Ventilation System on Weather Decks

Plans should generally be submitted in electronically to ABS. However, hard copies will also be accepted.

3 Machinery Plans

Plans showing the boiler, main propulsion engine, reduction gear, shafting and thrust bearing foundations (See 3-2-1/25 or 3-2-1/21 of the *River Rules*), including holding-down bolts; also machinery general arrangement, installation and equipment plans as referenced in Part 4 of the *River Rules*, are to be submitted and approved before proceeding with the work.

5 Additional Plans

Where certification under 1-1-5/3 or 1-1-5/5 is requested, submission of additional plans and calculations may be required.

PART 1

CHAPTER 5

Classification Requirements for Steel Barges

CONTENTS

PART 1

CHAPTER 5

Classification Requirements for Steel Barges

SECTION 1

Classification *(1 January 2008)*

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to steel barges are contained in the following Sections of this Chapter.

PART 1

CHAPTER 5

Classification Requirements for Steel Barges

SECTION 2

Classification Symbols and Notations *(1 January 2008)*

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

The following notations are specific to steel barges.

1 Unrestricted Service

Barges which have been built to the satisfaction of the ABS Surveyors to the full requirements of the Rules, or to their equivalent, where approved by the Committee for unrestricted ocean service will be classed and distinguished in the *Record* by the symbols ✠**A1** followed by the appropriate designation, such as **Oil Tank Barge**, **Fuel Oil Tank Barge**, etc., indicating compliance with the requirements of the Rules.

3 Classification Designations *(2015)*

3.1 Barge

For all barges not falling under the categories of of 1-5-2/5.1 through 1-5-2/5.33 , a note will be included in the *Record* describing the primary function of the barge such as deck cargo barge, bulk cargo barge, etc. Design review and survey are to be carried out in accordance with the applicable Rule requirements for the intended service and primary function of the barge and Classed as such.

5 Notations *(2015)*

5.1 Oil Tank Barge

Barge intended to carry petroleum products with a flash point at or below 60°C (140°F) (closed cup test).

5.3 Fuel Oil Tank Barge

Barge intended to carry petroleum products with a flash point above 60°C (140°F) (closed cup test).

5.5 Chemical Tank Barge

Barge intended to carry dangerous chemicals, such as those indicated in 5-2-4/1.9 of the *Barge Rules*.

5.7 Liquefied Gas Tank Barge *(2015)*

Barge intended to carry liquid gases such as those indicated in Section 5-2-5 of the *Barge Rules*.

5.9 Tank Barge

Barge intended to carry liquids in bulk not covered by other classification designations of this Section.

5.11 Independent Tank Barge

Barge intended to carry cargo in independent tanks with a working pressure below 2.06 bar (2.1 kgf/cm^2, 30 psi) and not covered by other classification designations of this Section.

5.13 Pressure Tank Barge

Barge intended to carry cargo in independent tanks with a working pressure at 2.06 bar (2.1 kgf/cm^2, 30 psi) or above and not covered by other classification designations of this Section.

5.15 Fuel Oil or Chemical Tank Barge

Barge intended to carry petroleum products or dangerous chemicals, but not at the same time, as stated in 1-5-2/5.3 and 1-5-2/5.5.

5.17 Fuel Oil and Chemical Tank Barge

Barge intended to carry petroleum products and dangerous chemicals, at the same time, as stated in 1-5-2/5.3 and 1-5-2/5.5.

5.19 Oil or Chemical Tank Barge

Barge intended to carry petroleum products or dangerous chemicals, but not at the same time, as stated in 1-5-2/5.1 and 1-5-2/5.5.

5.21 Oil and Chemical Tank Barge

Barge intended to carry petroleum products and dangerous chemicals, at the same time, as stated in 1-5-2/5.1 and 1-5-2/5.5.

5.23 ITB Barge *(2015)*

The notation **ITB** is intend for a tug-barge combination wherein a tug is mated to a barge with an especially designed connection system such that the tug is secured in the barge notch or on fenders by mechanical means of any type whatsoever other than simply wire ropes, chains, lines or other tackle. See Section 5-3-1 of the *Barge Rules*.

5.25 Oil Spill Recovery Barges (OSR-S1, OSR-C1, OSR-S2 or OSR-C2) *(2015)*

Barges intended to recover spilled oil from the sea. The notations **OSR-S1**, **OSR-C1**, **OSR-S2** or **OSR-C2** will be assigned based on barge type as indicated in 5-3-2/1.3 of the *Barge Rules*. See Section 5-3-2 of the *Barge Rules*.

5.27 Crane CRC Barge *(2015)*

The notation **Crane CRC** is intended for barges fitted with cranes permanently installed on board the barge and intended for operations other than supply of provisions and maintenance of the barge. They can be pedestal mounted rotating, heavy lift, gantry, shear leg, stiffleg and "A"-frame type cranes, as defined in 2-1/9.1, 2-1/9.3 and 2-1/9.5 of the ABS *Guide for Lifting Appliances*. Other types of cranes will be considered on an individual basis. See Section 5-3-3 of the *Barge Rules.*

5.29 Pipe Laying Barge *(2015)*

The notation **Pipe Laying** is intended apply to barges intended for unrestricted service that are primarily engaged in installation of subsea pipelines. See Section 5-3-4 of the *Barge Rules*.

5.31 Cable Laying Barge *(2015)*

The notation **Cable Laying** is intended apply to barges intended for unrestricted service that are primarily engaged in installation, maintenance and repair of underwater telecommunication cables and power transmission cables. See Section 5-3-5 of the *Barge Rules*.

5.33 Accommodation Barge *(2015)*

The notation **Accommodation** is intended for barges which operate offshore as accommodation barges or other barge types that are provided with accommodations in support of the workings of the barge. See Section 5-3-6 of the *Barge Rules*.

5.35 Machinery

Machinery and systems for barges are to comply with the applicable requirements of Part 4 of the *Barge Rules*. Thruster machinery and systems used for short field moves (consisting of moving the unit from one work location to another location within the same area of operation, that takes no longer than 12 hours and is conducted in daylight hours) of non-propelled units and complying with the requirements of the *Marine Vessel Rules* as applied to self-propelled units, manufactured and installed under ABS survey and found satisfactory after trials, will be distinguished in the *Record* by the notation ✠**AMS-NP**, as appropriate.

7 Dual and Multi Purpose Barges *(2015)*

Barges intended for several functional services covered by Part 5 of the *Barge Rules* may be assigned a combination of the class notations provided that the specific requirements for each intended service are complied with.

For example, a barge capable of lifting operations and having accommodations on board could be assigned the classification ✠**A1 Barge, Crane CRC, Accommodation**.

PART 1

CHAPTER 5

Classification Requirements for Steel Barges

SECTION 3

Rules for Classification *(1 January 2008)*

1 Application

1.1 General

The ABS *Rules for Building and Classing Steel Barges (Barge Rules)* are applicable to steel barges intended for unrestricted ocean service, except where specifically mentioned otherwise.

1.3 Safety Requirements for Barges with Personnel

Barges which are intended to be manned at sea, whether on a voyage or on-site offshore by crew or special personnel, are to comply with 3-5-1 of the *Barge Rules*. Special personnel are persons who are not passengers or crew and who are carried on board in connection with the special purpose of that barge or because of the special work being carried out aboard that barge.

3 Interpretation

Any disagreement regarding either the proper interpretation of the Rules or translation of the Rules from the English language edition is to be referred to ABS for resolution.

PART 1

CHAPTER 5

Classification Requirements for Steel Barges

SECTION 4

Submission of Plans *(2020)*

1 Hull Plans *(2011)*

Plans showing the scantlings, arrangements, and details of the principal parts of the hull structure of each barge to be built under survey are to be submitted and approved before the work of construction is commenced. These plans are to indicate clearly the scantlings and details of welding, and they are to include such particulars as the design draft. Where provision is to be made for any special type of cargo or for any exceptional conditions of loading, whether in ballast or with cargo, particulars of the weights to be carried and of their distribution are also to be given.

In general these plans should include the following:

- General Arrangement (for information)
- Midship Section
- Scantling Profile and Decks
- Bottom construction, floors, girders, etc.
- Framing Plan
- Inner Bottom Plating
- Shell Expansion
- Deck Plans
- Trusses
- Pillars and Girders
- Watertight and Deep-tank Bulkheads
- Miscellaneous Non-tight Bulkheads which are used as structural supports
- Skeg attachment foundations
- Bow framing
- Stern framing
- Superstructures and Deckhouses and their closing arrangements
- Hatches and Hatch-closing Arrangements
- Ventilation system on weather decks

- Anchor handling arrangements

Plans should generally be submitted electronicall to ABS. However, hard copies will also be accepted.

3 Machinery Plans *(2011)*

Plans showing the proposed arrangements of bilge, ballast, cargo, electrical, vents and sounding systems, associated pumping machinery and other machinery, equipment and systems as referenced in 4-1-1, 4-1-2 and 4-1-3 of the *Barge Rules* are to be submitted and approved before proceeding with the work. The sizes, materials, joint details and welding or other methods of construction are to be shown on the plans as clearly and fully as possible. Plans and data, as applicable, should generally be submitted electronically to ABS. However, hard copies will also be accepted. All plan submittals originating from manufacturers are understood to be made with the cognizance of the shipbuilder.

PART 1

CHAPTER 6

Classification Requirements for Steel Floating Dry Docks

CONTENTS

PART 1

CHAPTER 6
Classification Requirements for Steel Floating Dry Docks

SECTION 1
Classification *(1 January 2008)*

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to steel floating dry docks are contained in the following Sections of this Chapter.

PART 1

CHAPTER 6

Classification Requirements for Steel Floating Dry Docks

SECTION 2

Classification Symbols and Notations *(1 January 2008)*

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units, and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

The following notations are specific to steel floating dry docks.

1 Dry Docks Built Under Survey

Dry docks which have been built to the satisfaction of the ABS Surveyors to the requirements as contained in the *Dry Dock Rules* will be classed and distinguished in the *Record* by the symbols ✠**A1 Floating Dry Dock**. Notations indicating the dry dock lifting capacities and the operating site also will be shown in the *Record*.

PART 1

CHAPTER 6

Classification Requirements for Steel Floating Dry Docks

SECTION 3

Rules for Classification *(1 January 2008)*

1 Application

The ABS *Rules for Building and Classing Steel Floating Dry Docks (Dry Dock Rules)* apply in general to dry docks over 61 m (200 ft) in length. Dry docks of less length will be subject to special consideration. When the dry dock is to be operated or towed in other than sheltered waters, special consideration is to be given to the longitudinal strength, wing wall strength, reinforcement against slamming, freeboard and stability, and other items as considered necessary.

3 Dry Dock Types

These Rules apply to the following dry dock types.

- One piece dry dock type in which the wing walls and the pontoon are continuous and inseparable along the dock structure
- Continuous-wing, sectional-pontoon type in which the wing walls run continuously and the bottom is formed of separable or permanently attached sectional pontoons
- Continuous pontoons and discontinuous wing walls.
- Sectional type with discontinuous sections of the wing walls and the bottom pontoon in which rotation or vertical movement or both is possible between each discontinuous section.

PART 1

CHAPTER 6
Classification Requirements for Steel Floating Dry Docks

SECTION 4
Submission of Plans

Plans showing the scantlings, arrangements, and details of the principal parts of the structure to be built under survey are to be submitted for review or approval before construction is commenced. These plans are to clearly indicate the scantlings, joint details and welding, or other methods of connection.

Plans should generally be submitted electronically. If plans are submitted in hard copy, then they are generally to be submitted in triplicate, one copy to be returned to those making the submission, one copy for the use of the Surveyor where the vessel is being built, and one copy to be retained in the Bureau Technical office for record. Additional copies may be required where the required attendance of the Surveyor is anticipated at more than one location.

In general, these plans are to include the following where applicable.

- General arrangement plan
- Transverse section scantlings at mid-length of dry dock
- Structural plans of the wing walls and pontoons
- Structural plans of the decks and bulkheads
- Tank arrangements showing also maximum service heads and heights of overflows and vent pipes and where used in design, data showing the maximum differential service head
- Pumping arrangements
- Machinery and electrical plans
- Piping systems
- Fire extinguishing systems
- Stability calculations and hydrostatic curves
- Calculations and data for longitudinal strength analysis
- Block loading data
- Operating manual
- Crane load distribution
- Particulars of indicator systems for tank water level and drafts
- Particulars of deflection indicating system

PART 1

CHAPTER 7

Classification Requirements for Underwater Vehicles, Systems and Hyperbaric Facilities

CONTENTS

PART 1

CHAPTER 7

Classification Requirements for Underwater Vehicles, Systems and Hyperbaric Facilities

SECTION 1

Classification *(1 January 2008)*

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to underwater vehicles, systems, and hyperbaric facilities are contained in the following Sections of this Chapter.

PART 1

CHAPTER 7

Classification Requirements for Underwater Vehicles, Systems and Hyperbaric Facilities

SECTION 2

Classification Symbols and Notations *(1 January 2008)*

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

The following notations are specific to underwater vehicles, systems and hyperbaric facilities.

1 Classed Units *(2012)*

Manned or occasionally manned underwater vehicles, underwater facilities, hyperbaric facilities, and diving simulators which have been built to the satisfaction of the ABS Surveyors to the full requirements of the *Underwater Vehicles Rules*, or their equivalent, where approved by the Committee for the service will be classed and distinguished in the *Record* by the symbols ✠**A1** followed by the appropriate notation, such as **Submersible**, **Passenger Submersible**, **Lock-Out Submersible**, **Remotely Operated Vehicle**, **Habitat**, etc.

3 Classed Systems *(2012)*

In addition to the Classification of the individual underwater vehicles, underwater facilities, and hyperbaric facilities mentioned in 1-7-2/1, a system may be classed and distinguished in the *Record* by the symbols ✠**A1** followed by the appropriate notation, such as **Air Diving System (P) or (F), Mixed Gas Diving System (P) or (F)**, **Saturation Diving System (P) or (F)** (See 13/3 of the *Underwater Vehicles Rules*), **Underwater Complex**, etc., provided the system has been built to the satisfaction of the ABS Surveyors to the full requirements of the *Underwater Vehicles Rules*, or their equivalent.

5 Support Components for Classed Systems *(2012)*

Support components for classed systems include pressure vessels for human occupancy (surface compression chambers, diving bells, hyperbaric evacuation units, etc.), handling systems and dive control stations.

Support components that have been built under the supervision of the ABS Surveyors to the full requirements of the *Underwater Vehicles Rules*, or their equivalent, may be certified by ABS and issued Underwater System Support Component Certificates (ABS-USC-1) with the symbol ✠ followed by the appropriate notation, such as **Diving Bell, Handling System**, **Dive Control Station**, etc.

Support components certified under the provisions of these Rules, whose surveys are maintained current, are eligible for use in a classed system.

7 New and Existing Underwater Units, Systems or Support Components Not Built Under Survey *(2012)*

Units, systems or support components not built under ABS survey but for which classification or certification (as applicable) is requested at a later date, will require submittal of available drawings and/or documentation as listed in Sections 1-7-4 and 1-7-5 in conjunction with the following:

i) Welding procedures (WPS) and performance qualifications records (PQR)

ii) NDT records

iii) Material mill test reports

iv) All other certificates of past surveys and tests results conducted by the original certifying agency, insofar as such documentation is available and valid

v) Written test procedures for the tests and trials required to be performed for classification or certification

New and existing pressure hulls and pressure vessels for human occupancy and acrylic windows will only be accepted if proof of fabrication under survey by an IACS member Classification Society or recognized Flag Administration is provided.

Additionally, the units, systems or support components will be subject to special periodical surveys, hydrostatic and functional tests.

Where found satisfactory and thereafter approved by the Committee, the underwater unit or system will be classed and distinguished in the *Record* by the appropriate symbols and notations as described in 1-7-2/1 and 1-7-2/3, but the mark ✠ signifying the survey during construction will be omitted.

Where found satisfactory, the support component will be issued an Underwater System Support Component Certificate (ABS-USC-1) with the appropriate notations, but the symbol ✠ as described in 1-7-2/5 signifying survey during construction will be omitted.

9 Other Conditions

The Committee reserves the right to refuse classification of any unit or system in which the machinery, life support, piping, electrical systems, etc., are not in accordance with the requirements of the *Underwater Vehicles Rules*.

PART 1

CHAPTER 7

Classification Requirements for Underwater Vehicles, Systems and Hyperbaric Facilities

SECTION 3

Rules for Classification

1 Application of Rules *(2012)*

The ABS *Rules for Building and Classing Underwater Vehicles, Systems and Hyperbaric Facilities (Underwater Vehicles Rules)* in association with the latest edition of the ABS *Rules for Building and Classing Marine Vessels (Marine Vessel Rules)*, present the requirements for the classification of underwater vehicles, systems and hyperbaric facilities intended for use in manned underwater operations as defined in Section 2 of the *Underwater Vehicles Rules*.

PART 1

CHAPTER 7

Classification Requirements for Underwater Vehicles, Systems and Hyperbaric Facilities

SECTION 4

Submission of Plans, Calculations, Data and Test Results

1 Submission Schedule and Number of Copies *(2011)*

Before commencement of fabrication, plans and other documents indicating the required particulars are to be submitted. Plans should generally be submitted electronically to ABS. However, hard copies will also be accepted.

3 Documentation to be Submitted *(2010)*

The plans and details required for review and approval are as follows and are to be submitted as applicable to the particular design features and/or systems.

3.1 Design and Operational Parameters *(2007)*

Design pressures and depths

Design temperatures

Hydrostatic test pressures

Design sea state conditions

Maximum operating depth

Maximum mission time

Maximum number of occupants (passengers and crew) in each unit and/or system

Maximum weight of units including occupants, contents, entrapped water, etc.

Maximum towing speed/towing line tension

Maximum speed while surfaced and submerged

3.3 General

General arrangement

Cross-section assembly

Outboard profile

Dimensional details of pressure hull, pressure vessel(s) and scantlings

Material specifications and grades, including tensile and impact values, for all pressure retaining or load bearing items

Weld details of pressure hull, pressure vessel(s) and scantlings

Welding procedures to include base and filler materials, pre and post weld heat treatment, tensile and impact values, extent of nondestructive testing.

Out-of-roundness tolerances

Fabrication tolerances

Dimensional details of penetrators, hatch rings, hatch details, lugs and any other internal or external connection to the hull

Penetrator sealing arrangements

Hatch sealing arrangements

Nameplate, including nameplate material and method of attachment

Plan showing all hull valves, fittings and penetrations

Exostructure details

Dimensional details of viewport components

Hard ballast tanks design details

Soft ballast tanks design details

Piping systems including pump capacities and pressure relief devices

Ballast piping systems

Layout of control stands

Equipment foundation and support arrangements with details where such foundations and supports increase stresses in the pressure hull or experience significant stress due to the operating loads encountered

Release devices and arrangement for jettisonable weights and equipment

Propeller details including shafting, bearings and seals

Propulsion motors, thrusters and wiring diagram

Steering control system

Electrical distribution system

Battery capacity, arrangement and main feeder scheme

Lifting and handling system

Depth indicating systems

Emergency systems

Fire fighting system

Details for permanently installed pressure vessels

Documentation for portable pressure vessels including standards of construction and design calculations for external pressure if units may at any time be subject to this condition.

List and location of implodable volumes

Materials and dimensions of umbilicals including cross sectional details

Any additional system deemed necessary to the intended operations

3.5 Life Support Systems and Equipment

Life support system details, both normal and emergency

Life support system capacities, fluids contained and supply arrangement

Specifications for environmental control systems and equipment including heating, gas analysis (CO_2, CO, CH_4, O_2, etc), absorption, circulation, temperature control, humidity control, equipment for tracing contaminants

Component list including manufacturer, model, design specifications and test documentation for all equipment used in the life support system

For gas analyzers: specifications of type of gas to be detected, principle of detection, range of pressures under which the instrument may be used

Lodging facilities and drainage systems in hyperbaric chambers

3.7 Procedures

Procedures for out-of-roundness and sphericity measurements

Cleaning procedures for breathing gas systems

Inclining experiment procedures

Functional test procedures

Sea trial procedures for normal and emergency conditions

5 Calculations *(2002)*

The following calculations and analyses are to be submitted for review:

- Pressure vessel stress analysis in compliance with Section 6 of the *Underwater Vehicles Rules*
- Foundation stress analysis
- Pressure hull support reaction analysis
- Analysis of lifting load and stresses induced in the hull
- Window calculations in compliance with 7 of the *Underwater Vehicles Rules*
- Life support system analysis

- Heat/cooling consumption for the hyperbaric chamber or underwater vehicle under the design conditions and the expected environmental temperatures
- Electrical load analysis and loss of power, power sources; power demands
- Short circuit current calculations
- Coordination of short circuit protection devices (coordination study)
- Calculation for the center of gravity and center of buoyancy
- Intact stability analysis
- Damage stability analysis
- Hydrodynamic ascent calculations under normal and emergency conditions

7 Operational Data

The following operational data are to be submitted:

- Description of operations
- Description of units and intended service

9 Test Results

Data for the following tests, which are to be performed to the satisfaction of Surveyor, are to be submitted:

- Material tests
- Procedure and welder qualification test results
- Out-of-roundness measurements before and after hydrostatic test
- Hydrostatic tests
- Strain gauge tests, as applicable
- Electrical system insulation tests
- Life support tests
- Functional test of completed unit or chamber
- Test dive of completed underwater unit at rated depth (to include deadweight survey and inclining experiment)

1 Operating Manual *(2007)*

An operating manual describing normal and emergency operational procedures is to be provided and is to be submitted for review. The manual is to include the following as applicable.

- System description
- Operation check-off lists (list to include equipment requiring operational status verification or inspection prior to each dive/operation and verification of the existence of appropriately updated maintenance schedule – see 1-7-5/3)
- Operational mission time and depth capabilities
- Sea state capabilities (see 20/55.1 TABLE 1 of the *Underwater Vehicles Rules*)
- Geographical dive site limitations (such as maximum current, night/limited visibility operation and list of operational and environmental hazards, if any, to be avoided.) as related to the design parameters addressed in Section 1-7-4 of these Rules and 11/49.3 of the *Underwater Vehicles Rules*
- Special restrictions based on uniqueness of design and operating conditions
- Life support system description including capacities
- Electrical system description
- Launch and recovery operation procedures
- Liaison with support vessel
- Emergency procedures, developed from systems analysis, for situations such as power failure, break in lifting cable, break in umbilical cord, deballasting/jettisoning, loss of communications, life support system malfunction, fire, entanglement, high hydrogen level, high oxygen level, internal and external oxygen leaks, stranded on bottom, minor flooding, and specific emergency conditions characteristic of special types of systems.
- Emergency rescue plan (see 11/35.3.1 and 11/35.5 of the *Underwater Vehicles Rules*)
- Color coding adopted

3 Maintenance Manual *(2002)*

A maintenance manual containing procedures for periodic inspection and preventive maintenance techniques is to be submitted for review. The manual is to include the expected service life of the pressure hull and of other vital components/equipment (e.g., viewports, batteries, etc.), methods for recharging life support, electrical, propulsion ballast and control systems and specific instructions for the maintenance of items requiring special attention.

5 Availability *(2007)*

The operating and maintenance manuals together with operational and maintenance records are to be readily available at the operation site and copies are to be made available to the Surveyor upon request. Summarized procedures for normal and emergency operations are to be carried onboard the unit.

PART 1

CHAPTER 7

Classification Requirements for Underwater Vehicles, Systems and Hyperbaric Facilities

SECTION 6

Personnel

Underwater and related operations are a complex undertaking. In addition to the fitness represented by Classification as described in 1-1-1/5, appropriate personnel are of utmost importance to the successful and safe completion of a mission. Such issues fall under the purview of local jurisdictions, as noted in Section 1-1-5, and so are specifically not addressed by ABS.

Owners and Operators of commercial and non-commercial underwater units are ultimately responsible for, and are to assure themselves of, the competence of those performing activities related to the unit. Guidance may be obtained from the unit manufacturer, persons or entities believed by the Owner/Operator to be competent in the field and with the subject equipment, organizations such as the Association of Diving Contractors (ADC), from publications such as the *Guidelines for Design, Construction and Operation of Passenger Submersible Craft* published by the International Maritime Organization (IMO) or from other sources as may be deemed appropriate by the Owner/Operator.

PART 1

CHAPTER 8

Classification Requirements for Bulk Carriers for Service on the Great Lakes

CONTENTS

PART 1

CHAPTER 8
Classification Requirements for Bulk Carriers for Service on the Great Lakes

SECTION 1
Classification *(1 January 2008)*

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to bulk carriers for service on the Great Lake are contained in the following Sections of this Chapter.

PART 1

CHAPTER 8

Classification Requirements for Bulk Carriers for Service on the Great Lakes

SECTION 2

Classification Symbols and Notations *(1 January 2008)*

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

The following notations are specific to bulk carriers for service on the Great Lakes.

1 Great Lakes Service *(2021)*

Vessels which have been built under the supervision of the ABS Surveyors to the requirements of the ABS *Rules for Building and Classing Marine Vessels*, except where these are modified by the requirements contained in the *Great Lakes Bulk Carrier Rules*, or to their equivalent, will be classed and distinguished in the *Record* by the symbols ✠ **A1 Great Lakes Service**.

Vessels which have been built under the supervision of the ABS Surveyors to the requirements of the ABS *Rules for Building and Classing Steel Barges*, except where these are modified by the requirements contained in the *Great Lakes Bulk Carrier Rules*, or to their equivalent, will be classed and distinguished in the *Record* by the symbols ✠ **A1 Barge**, **Great Lakes Service**.

3 Unloading Equipment

Where the vessel has been specially arranged and provided with special equipment for unloading, it will be distinguished in the *Record* with an appropriate notation regarding the arrangements.

5 Heavy Density Cargoes

Where the vessel has been specially reinforced for the carriage of heavy-density cargoes, special loading arrangements, or both, it will be distinguished in the *Record* with a notation describing the special arrangements. Full particulars of the loading conditions and the maximum density of the cargoes to be provided for are to he given on the basic design plans.

PART 1

CHAPTER 8

Classification Requirements for Bulk Carriers for Service on the Great Lakes

SECTION 3

Rules for Classification *(1 January 2008)*

1 Application of Rules

The ABS *Rules for Building and Classing Bulk Carriers for Service on the Great Lakes (Great Lakes Bulk Carrier Rules)* are intended to apply to new vessels of the Great Lakes bulk/carrier type, having machinery aft, at least one complete deck, a double bottom and side tanks, a longitudinal system of framing for the deck and bottom, and two continuous longitudinal bulkheads fitted between the freeboard deck and the bottom shell. They are intended to apply generally to vessels of welded construction, of usual form and having depths not less than $L/15$ at 400 ft (122 in) length and $L/21$ at 700 ft (213 m) length and over. Vessels whose proportions and general characteristics represent departures from the foregoing and whose scantlings and arrangements differ from those specifically mentioned elsewhere in the *Great Lakes Bulk Carrier Rules* be subject to special consideration.

These requirements are applicable to those features that are permanent in nature and can be verified by plan review, calculation, physical survey, or other appropriate means. Any statement in the Rules regarding other features is to be considered as a guidance to the designer, builder, Owner, et al.

PART 1

CHAPTER 9

Classification Requirements for Yachts

CONTENTS

PART 1

CHAPTER 9
Classification Requirements for Yachts

SECTION 1
Classification

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to yachts are contained in the following Sections of this Chapter.

PART 1

CHAPTER 9
Classification Requirements for Yachts

SECTION 2
Classification Symbols and Notations

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

The following notations are specific to the various types of yachts included in the *Yacht Guide*.

1 Hull

1.1 Pleasure Yachts *(1 October 2018)*

In accordance with 1-1-3/3, the classification ✠**A1 Yachting Service** will be assigned to vessels designed for pleasure yachting service and built to the applicable requirements in Part 3 and Part 4 and other relevant sections of the *Yacht Guide*. Motor yachts receiving a **Yachting Service** notation are permitted to operate with unlimited range geographically in association with voyages planned based on weather routing and with restrictions on significant wave height of 4.0 m (13.1 ft) for the *Operational Design Condition* and 6 m (19.7 ft) for the *Maximum Design Condition*. See also 1-1-4/1.1.

1.3 Restricted Service Yachts

In accordance with 1-1-3/3, the classification ✠**A1 Yachting Service R** will be assigned to vessels designed for restricted pleasure yachting service and built to the applicable requirements in Part 3 and Part 4 and other relevant sections of the *Yacht Guide*. Restricted service yachts are restricted to operate a distance from a place of refuge of not more than 200 nautical miles and with restrictions on significant wave height of less than 3.5 m (11.5 ft) for the *Operational Design Condition* and 4.5 m (14.8 ft) for the *Maximum Design Condition*. Voyages between 100 nautical miles and 200 nautical miles from a place of refuge must include voyage planning based on weather routing.

1.5 Commercial Yachts *(2022)*

In accordance with 1-1-3/3, the classification ✠**A1 Commercial Yachting Service** may be assigned to yachts built as noted in 1-9-2/1.1 which are chartered as motor, sailing, or motor-sailing yachts or carry passengers for revenue, are not considered by the Administration to be a SOLAS passenger vessel or an IMO HSC Code craft , do not carry more than 12 charter guests, do not carry cargo, and are built to the applicable requirements in Part 3, Part 4, Part 5, and other relevant sections of the *Yacht Guide*.

In addition to the *Yacht Guide*, Commercial Yachts are to comply with recognized statutory requirements for commercial yachts such as the Part A of Red Ensign Group Yacht Code. Where a flag State has

alternative requirements, statutory items may be considered to be in compliance with these requirements. The scope would be limited to those items delegated to ABS by the flag State. In order to maintain the **Commercial Yachting Service** notation, the yacht will need to maintain compliance with these requirements throughout the life of the yacht. Commercial Yachts are not eligible for the restricted service notation **Yachting Service R**. Motor yachts receiving a **Commercial Yachting Service** notation are permitted to operate with unlimited range geographically in association with voyages planned based on weather routing and with restrictions on significant wave height of 4.0 m (13.1 ft) for the *Operational Design Condition* and 6 m (19.7 ft) for the *Maximum Design Condition*. See also 1-1-4/1.1.

1.7 Passenger Yachts *(2022)*

In accordance with 1-1-3/3, the classification ✠**A1 Passenger Yachting Service** will be assigned to yachts built as noted in 1-1-3/3 which are commercial or private yachts of any length, constructed of steel or aluminum, that are not considered by the Administration to be a SOLAS passenger vessel or an IMO HSC Code craft, that carry 13 to 36 passengers, do not carry cargo and are built to the applicable requirements detailed below:

i) Class items are to be in accordance with Part 5C, Chapter 7 of the *Marine Vessel Rules* in regard to structural, mechanical, and electrical requirements. (Where considered appropriate based on the yacht's Rule Length *L*, other applicable parts of the *Marine Vessel Rules* may be applied.)

ii) Statutory items are to be in compliance with Part B of Red Ensign Group Yacht Code for Red Ensign flag States or SOLAS Passenger vessel regulations (<36 passengers) for other flags not having their own code. Where a flag State has alternative requirements, statutory items may be considered to be in compliance with these requirements. The use of the Part B of Red Ensign Group Yacht Code by flag states other than Red Ensign is to be in accordance with the provisions of the Part B of Red Ensign Group Yacht Code.

Passenger yachts are to comply with the operational limits in the flag state Passenger Yacht Code.

For yachts receiving load line assignment, see Section 1-1-5.

3 Machinery *(1 September 2017)*

AMS is a classification notation that, together with the Maltese Cross ✠ symbol, indicates that a yacht's machinery, boilers and systems have been constructed and installed under ABS survey in accordance with the requirements of the ABS Rules. The ✠**AMS** notation is a mandatory requirement for all new construction yachts receiving the **Passenger Yachting Service** notation .

For all new construction yachts receiving the ✠**A1 Commercial Yachting Service** notation and for all new construction yachts over 61 m (200 ft) in length receiving the ✠**A1 Yachting Service** notation, the notation **(✠) AMS** may be assigned in lieu of ✠**AMS**, provided that all yacht's machinery, boilers and systems meet all the requirements for ✠**AMS** except for propulsion engines and their associated reduction gears, as well as auxiliary generators and their prime movers only.

Propulsion engines and their associated reduction gears, as well as auxiliary generators and their prime movers may be accepted based on Manufacturer's Work certificate and valid ABS Type Approval Certification, inclusive of Product Design Assessment (PDA) and Manufacturing Assessment (MA), as per Tier 3 definition in Appendix 1-1-A4. See also 1-9-2/3 TABLE 1 below.

TABLE 1 *(1 July 2017)*

Machinery Notation	*Design Approval*	*Certification of Propulsion Engines and Their Associated Reduction Gears, Auxiliary Generators and Their Prime Movers*
⊠ **AMS**	ABS	ABS
(⊠) AMS	ABS	*1)* ABS or *2)* Manufacturer's certificate and ABS Type Approval Certificate inclusive of PDA and MA

ABS will accept **AMS** without the "⊠" for new construction of non-commercial pleasure yachts less than 61 m (200 ft) in length with engines and gears which are design approved and not surveyed at the time of manufacture provided the engines and gears are issued with an ABS Interim Product Certificate (PQA).

PART 1

CHAPTER 9
Classification Requirements for Yachts

SECTION 3
Rules for Classification *(2018)*

1 Application of Guide

1.1 General

The ABS *Guide for Building and Classing Yachts (Yacht Guide)* is applicable to pleasure yachts intended for yachting service, in which sailing yachts may undertake long ocean voyages while motor yachts operate on shorter voyages in which the sea states and distance from safe refuge are considered. These operating conditions are addressed in the relevant parts of the *Yacht Guide*. Yachts engaged in chartering are to be in accordance with Part 3 and Part 4 and other relevant sections of the *Yacht Guide* as well as the applicable requirements of Part 5 of the *Yacht Guide*.

Yachting service operations are considered to be much less severe than those of ships in regular trade, to have limited yearly at-sea hours compared to their in port hours and to have special care and good maintenance by their owners and crew.

Where reference is made herein to the ABS *Rules for Building and Classing Marine Vessels (Marine Vessel Rules)*, the latest edition of those Rules is intended.

These requirements are applicable to those features that are permanent in nature and can be verified by plan review, calculation, physical survey or other appropriate means. Any statement in the *Yacht Guide* regarding other features is to be considered as guidance to the designer, builder, Owner, et al.

1.3 Application

The *Yacht Guide* is applicable to pleasure yachts 24 meters (79 feet) or greater in length overall to 90 meters (295 feet) in length as defined in 3-1-1/3 of the *Yacht Guide*.

Yachts over 90 m (295 ft) in length and constructed of steel are to be classed in conjunction with the ABS *Rules for Building and Classing Marine Vessels (Marine Vessel Rules)*.

Yachts over 90 m (295 ft) in length and constructed of fiberglass reinforced plastic (FRP) or aluminum are to be classed in conjunction with the ABS *Rules for Building and Classing High Speed Craft (HSC Rules)*.

Pleasure yachts are self-propelled craft that are engaged exclusively in recreational, non-cargo handling, non-governmental, non-passenger service.

Commercial yachts are self-propelled craft that are chartered as motor, sailing, or motor-sailing yachts and are not considered by the Administration to be a SOLAS passenger vessel or an IMO HSC Code craft, do not carry more than 12 charter guests and do not carry cargo.

Passenger yachts are commercial or private yachts of any length, constructed of steel or aluminum, that are not considered by the Administration to be a SOLAS passenger vessel or an IMO HSC Code craft, that carry 13 to 36 passengers and do not carry cargo.

Approval and classification are given with the understanding that the yacht will be operated with good seamanship having regard to sea state, distance to safe refuge, loading, stability, safety and speed. Review and classification of the yacht are on condition that the speed is appropriately reduced with increasing sea conditions with regard to limiting dynamic hull responses on which design is based and review is carried out. The scope of operation is to be shown in the Operating Manual for the yacht. See 3-2-1/7 of the *Yacht Guide* for operating manual requirements.

3 Government and Other Regulations

While the *Yacht Guide* covers the requirements for classification of new yachts, the attention of the owners, designers and builders is directed to the regulations of international, governmental, canal and other authorities dealing with those requirements in addition to or over and above the classification requirements.

PART 1

CHAPTER 9
Classification Requirements for Yachts

SECTION 4
Submission of Plans

Hull and machinery plans, as required below, are to be submitted to ABS for review and approval. Plans from designers and shipbuilders should generally be submitted electronically. However, hard copies will also be accepted. All plan submissions originating from manufacturers are understood to be made with the cognizance of the shipbuilder. A fee may be charged for the review of plans for which there is no contract of classification.

1 Hull Plans

Plans showing the arrangements, scantlings, details of principal parts of the hull structure and welding details of each yacht to be built under survey are to be submitted and approved before construction is commenced. These plans are also to include such particulars as the design draft, design speed and areas of intended operation. Where provision is to be made for any special type of loading conditions, particulars of the conditions are also to be given. In general, the plans as specified in 1-1-7/1 are to be submitted for review or reference.

3 Machinery Plans and Data

Plans and data required to be submitted to ABS for review and approval are listed in 4-1-1/7 of the *Yacht Guide*.

5 Additional Plans

Additional plans to be submitted specific to commercial yachts are given in Section 5-1-1 of the *Yacht Guide*.

Also, where certification under 1-9-4/3 or 1-9-4/5 is requested, submission of additional plans and calculations may be required.

7 Additional Requirements for FRP Yachts

For all FRP yachts, a “Building Process Description” and a “Quality Assurance Manual” is to be submitted for approval prior to the commencement of any lamination. See Section 2-6-3 of the ABS *Rules for Materials and Welding (Part 2)* .

9 Additional Requirements for Wooden Yachts

For all wooden yachts, a "Building Process Description" and a "Quality Assurance Manual" is to be submitted for approval prior to the commencement of any lamination. See 3-2-7/9 of the *Yacht Guide* and Section 2-6-4 of the ABS *Rules for Materials and Welding (Part 2)* .

PART 1

CHAPTER 10

Classification Requirements for Vessels Intended to Carry Compressed Natural Gases in Bulk

CONTENTS

PART 1

CHAPTER 10

Classification Requirements for Vessels Intended to Carry Compressed Natural Gases in Bulk

SECTION 1

Classification *(1 January 2008)*

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to vessels intended to carry compressed natural gases in bulk are contained in the following Sections of this Chapter.

PART 1

CHAPTER 10

Classification Requirements for Vessels Intended to Carry Compressed Natural Gases in Bulk

SECTION 2

Classification Symbols and Notations *(2008)*

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, "List of ABS Notations and Symbols" is available from the ABS website "http://www.eagle.org".

The following notations are specific to vessels intended to carry compressed natural gases in bulk.

1 Class Notations

In accordance with 1-1-3/3, the classification notation ✠**A1 Compressed Natural Gas Carrier** is to be assigned to vessels designed and specifically fitted for the carriage of Gas and built to the requirements of the *CNG Guide* and other relevant Sections of the Rules.

These requirements are intended to apply to steel vessels with machinery aft regardless of their size, including those of less than 500 tons gross tonnage, engaged in carriage of gas.

The requirements relating to the primary container apply only to Compressed Natural Gas. If the cargo composition carried in primary container has a presence of contaminants, these must be evaluated and additional measures will be required and are not covered in the *CNG Guide*. When there is a presence of contaminants, the scantlings may need to be suitably increased or an effective method of corrosion control is to be adopted and the design assessed for their effects.

The *CNG Guide* applies to the cargo containment system and related systems. The remainder of the vessel is to comply with the hull and machinery requirements of the Rules, except as modified in the *CNG Guide*.

CNG carriers that have been built, installed and commissioned to the satisfaction of the ABS Surveyors to the full requirements of the *CNG Guide*, where approved by the Committee, will be classed and distinguished in the ABS *Record* by:

✠**A1 Compressed Natural Gas Carrier**

PART 1

CHAPTER 10

Classification Requirements for Vessels Intended to Carry Compressed Natural Gases in Bulk

SECTION 3

Rules for Classification *(1 January 2008)*

1 Application of Rules

The ABS *Guide for Building and Classing Vessels Intended to Carry Compressed Natural Gases in Bulk (CNG Guide)* contains provisions for the classification of CNG carriers. The *CNG Guide* is intended for use in conjunction with the *Marine Vessel Rules* or other applicable ABS Rules and Guides.

3 Alternatives

The Committee is at all times ready to consider alternative arrangements and designs which can be shown, through either satisfactory service experience or a systematic analysis based on sound engineering principles, to meet the overall safety, serviceability and strength standards of the Rules and Guides. The Committee will consider special arrangements or design for details of CNG carriers and their equipment which can be shown to comply with standards recognized in the country in which the CNG carrier and its equipment are designed or built, provided these are not less effective.

Any departure from the requirements of the *CNG Guide* may be considered by ABS. In case of such departures, classification is subject to ABS's approval upon a demonstration of fitness for purpose in line with the principles of ABS Guides and Rules, as well as recognized and generally accepted good engineering practice. Risk acceptance criteria are to be developed in line with the principles of the ABS Rules and subject to ABS's approval. The ABS *Guidance Notes on Risk Assessment Application for the Marine and Offshore Industries* contain an overview of risk assessment techniques and additional information.

A risk approach justification of alternatives may be applicable either to the CNG carrier as a whole or to individual systems, subsystems or components. As appropriate, account must be given to remote hazards outside the bounds of the system under consideration. Such account must include incidents relating to remote hazards directly affecting or being influenced by the system under consideration. ABS will consider the application of risk-based techniques in the design of the CNG carrier, verification surveys during construction and surveys for maintenance of class.

Portions of the CNG carrier not included in the risk assessment are to comply with the applicable parts of the ABS Rules.

The following are the responsibility of the Owner/Operator:

i) Risk acceptance criteria

ii) Hazard identification

iii) Risk assessment

iv) Risk management

v) Compliance of the system under consideration with the applicable requirements of Flag and Coastal State

PART 1

CHAPTER 10

Classification Requirements for Vessels Intended to Carry Compressed Natural Gases in Bulk

SECTION 4

Submission of Data

The following plans, calculations and information, as appropriate, are to be submitted in addition to those required by Section 1-1-7.

i) Full particulars of the intended cargo or cargoes and their properties, including maximum temperature and loading and carriage procedures.

ii) General arrangement plans of the vessel showing the position of the following:

- Cargo containment system, cargo tanks, fuel oil, water ballast and other tanks and void spaces
- Openings in the cargo tanks and holds.
- Doors and other openings in spaces containing cargo handling systems and equipment and other gas-dangerous rooms
- Ventilation ducts of cargo pump and compressor rooms and other "gas-dangerous" spaces
- Door, air locks, manholes, ducts and other openings for "non-gas-dangerous" spaces which are, however, adjacent to the cargo area, including rooms inside and under the forecastle deck
- Cargo piping, loading and discharge located under and above deck
- Vent piping and gas-freeing piping and protective devices such as flame screens, etc. fitted at the outlet end of the vents etc.
- Gas-dangerous spaces
- Cargo process area layout
- Mooring system arrangements

iii) Plans of the hull structure in way of the cargo tanks, including the installation of attachments, accessories, internal reinforcements, saddles/skirts for support and tie-down devices.

iv) Plans of the structure of the cargo containment system, including the installation of attachments, supports and attachment of accessories

- For cargo tanks, the standard or Code adopted for the construction and design is to be identified.
- Detailed construction drawings together with design calculations for the pressure boundary, tank support arrangement and analysis for the load distribution.

- Anti collision, anti flotation, chocking arrangement and design calculations.

v) Distribution of the grades and of the types of steel proposed for the structures of the hull and of the cargo containment system, including attachments, accessories, etc., together with the calculation of the temperatures on all the structures which can be affected by the low temperatures of the cargo and Joules-Thompson effect

vi) Results of direct calculations of the stresses in the hull and in the cargo containment system

vii) Specifications and plans of the thermal protection system and calculation of the heat balance

viii) Procedures and calculations of the cooling-down, warm-up, loading and unloading operations

ix) Loading and unloading systems, venting systems and gas-freeing systems, as well as a schematic diagram of the remote controlled valve system

x) Details and installation of the safety valves and relevant calculations of their relieving capacity

xi) Details and installation of the various monitoring and control systems, including the devices for measuring the level of the cargoes in the tanks (if applicable) and the temperatures/ pressure in the containment system

xii) Schematic diagram of the ventilation system, indicating the vent pipe sizes and height of the openings above the main deck

xiii) Schematic diagram of the refrigeration system (if applicable) together with the calculations concerning the refrigerating capacity

xiv) Details of the electrical equipment installed in the cargo area and of the electrical bonding of the cargo tanks and piping

xv) Where fitted, plans and specifications relative to the use of the cargo as fuel for boilers and internal combustion engines (general installations; schematic diagram of the fuel-gas lines with the indication of all the valves and safety devices; compressors of the fuel gas and relevant engines; fuel-gas heaters and pressure vessels; installation of the burners of the fuel-gas and of the fuel oil; electrical bonding systems)

xvi) Details of testing procedures of cargo tanks and process systems

xvii) Diagram of inert-gas system or hold-space environmental-control system

xviii) Diagram of gas-detection system

xix) Blowdown and jettison arrangements, if provided

xx) Schematic-wiring diagrams

xxi) Details of all cargo, process and gas handling equipment

xxii) Details of fire extinguishing systems

xxiii) Welding procedures

xxiv) Emergency shutdown provisions and arrangements

xxv) Construction details of components of cargo handling systems, including material specification.

xxvi) Hazardous area drawing showing access, openings, vent outlets.

xxvii) Bilge and ballast arrangement for the cargo area.

xxviii) Emergency Towing Arrangement.

xxix) If gas processing is done onboard the vessel, then plans, calculations and information as listed in Section 3-2 of the ABS *Rules for Building and Classing Facilities on Offshore Installations* are to be submitted, as appropriate

xxx) If loading and unloading is done by providing Single Point Mooring system by internal or external turret system, please refer to ABS *Rules for Building and Classing Single Point Moorings* for detailed requirements

xxxi) Cargo Containment Survey Plan (see 17-2/1 of the *CNG Guide*)

PART 1

CHAPTER 11

Classification Requirements for Naval Ships

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PART 1

CHAPTER 11
Classification Requirements for Naval Ships

SECTION 1
Classification

The general requirements for conditions of classification are contained in Chapter 1 of these ABS *Rules for Conditions of Classification (Part 1)*.

Additional requirements specific to military vessels and other Government-owned vessels in non-commercial service are contained in the following Sections of this Chapter.

1 Process

The Rules, Guides, and standards are, in general, developed by the International Association of Classification Societies and by ABS staff, and passed upon by committees made up of naval architects, marine engineers, shipbuilders, engine builders, steel makers and by other technical, operating, and scientific personnel associated with the worldwide maritime and naval vessel design and construction industry. Theoretical research and development, established engineering disciplines, as well as satisfactory service experience are utilized in their development and promulgation. ABS and its committees can act only upon such theoretical and practical considerations in developing Rules, Guides, and standards.

Surveyors apply normally accepted examination and testing standards to those items specified for each survey by the Rules and Guides. Construction procedures, safety procedures, design and construction schedules, and construction supervision and quality assurance remain the responsibility of the shipyard, ship repairer, manufacturer, Owner or other client.

For classification, vessels are to comply with both the hull and the machinery requirements of the Rules and Guides, including satisfactory completion of all survey requirements and compliance with all Surveyor observations and conditions of class.

3 Certificates and Reports

3.1 Communication with the Naval Administration

Due to the number and complexity of systems, the number of separate certifications by other authorities, the overlap and/or interface of Classification requirements with other certification requirements, and other factors unique to naval vessel acquisitions, the sharing of Classification and certification status and information with the Naval Administration is necessary.

To this end, ABS will freely communicate and share classification related information with the Naval Administration to assist in rectification of deficiencies during vessel design, construction, and through-life surveys. Such information may include the text of conditions of classification, survey due dates, certificate

expiration dates, stamped copy of reviewed drawings, engineering review letters and comments, and copies of Surveyor comments, conditions of class, observations and reports regarding the vessel and its systems and equipment.

3.3 Communication with Other Certification Authorities

For naval vessels, there are many certifications needed from various Certification Authorities. Such certifications are not addressed by Classification requirements; they are accomplished for verifying technical compliance or functional performance of systems or equipment unique to military missions or capabilities unique to the vessel type. However, the certifications often relate to the same functional and physical systems covered by Classification and thus there are areas of overlap and/or interface between the requirements for certain certifications and the requirements for Classification. This creates a need for open communication and coordination with other certification authorities throughout the Classification process.

To this end, ABS will freely communicate and share classification related information with Certification Authorities to assist in rectification of deficiencies during vessel design, construction, and through-life surveys. Such information may include the text of conditions of classification, survey due dates, certificate expiration dates, stamped copy of reviewed drawings, engineering review letters and comments, and copies of Surveyor comments, conditions of class, observations and reports regarding the vessel and its systems and equipment.

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CHAPTER 11

Classification Requirements for Naval Ships

SECTION 2

Suspension and Cancellation of Classification

1 Notice of Surveys

It is the responsibility of the party requesting classification to ensure that all surveys necessary for achieving class are carried out during construction, and it is the responsibility of the Naval Administration that all surveys necessary for the maintenance of class for vessels in service are carried out at the proper time. ABS will notify the Naval Administration of upcoming surveys and conditions of class. This may be done by means of a letter or other communication. The non-receipt of such notice, however, does not absolve the Naval Administration from the responsibility to comply with survey requirements for maintenance of class.

3 Suspension of Class

3.1 General

1-1-2/7 defines the normal circumstances under which Class will be suspended and the Certificate of Classification will become invalid. Where ABS has been notified of a condition of national emergency declared by the Naval Administration that precludes normal Class activity, ABS will not automatically suspend Class. In such cases, a notation of "On National Emergency Service" will be entered in the Class record pending conclusion of the emergency and completion of all necessary surveys and repairs.

3.3 Transit for Demolition or Repair

The requirements of 1-1-2/7.11 would apply for vessels needing to transit from a lay-up site to a repair facility, provided class was not already suspended prior to lay-up.

3.5 Unforeseen Delays

If due to circumstances reasonably beyond the Owner's or ABS's control, such as unscheduled extension of time at sea to complete current mission; the suspension of class may be held in abeyance to allow the vessel to sail, in class, to an agreed port at which the overdue surveys will be completed, provided that the requirements of 1-1-2/7.13 are complied with.

5 Cancellation of Class

5.1 Aging Survey Completions

A longer suspension period than required by 1-1-2/11.5 may be granted for vessels which are on National Emergency Service.

7 Alternative Procedures for Certain Types of Vessels

1-1-2/13 does not apply to military vessels and other Government-owned vessels in non-commercial service.

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SECTION 3
Classification Symbols and Notations

1 General

This Section provides the fundamental ABS classification symbols and notations for naval vessels, along with certain optional notations that are recommended for naval vessels that should be considered and decided upon early in the acquisition process.

A complete listing of all Classification Symbols and Notations available may be viewed and downloaded from the ABS website "http://www.eagle.org". Optional notations are described further in Part 6 of the *INSG Guide*.

ABS Classification symbols and notations identify whether the vessel structure was or was not built under ABS Surveyor attendance, identify whether the anchoring/mooring equipment was built in compliance with the Rules or Guides, identify whether the vessel machinery was or was not built under ABS Surveyor attendance, identify the vessel type, identify applicable service route restrictions (if any), identify special analyses that have been requested and performed, and identify optional notations that have been requested which reflect special systems, features, or capabilities of the vessel.

3 Structural Notation

See 1-1-3/1 and 1-1-3/9.

5 Equipment Notation

See 1-1-3/11.

7 Machinery Notation

See 1-1-3/13 and 1-1-3/15 .

9 Vessel Types

The *INSG Guide* is intended to apply to Government owned vessels in non-commercial service whose primary purpose is for safety, security or defense. This would include combatant vessels (vessels equipped and outfitted for combat missions) and non-combatant vessels (auxiliary vessels serving combat support roles, or other vessels which may have limited or no weaponry whose purpose is mainly safety and security such as for harbor patrol, border patrol, or ports and waterways security).

Vessel types would include (but is not limited to): Cruisers, Destroyers, Frigates, Corvettes, Patrol Boats, Amphibious vessels, Amphibious Support vessels, Auxiliary ships, Ice Breakers, Buoy Tenders, Offshore Patrol vessels, Mine Hunters, Mine Sweepers, Mine Layers, Salvage and Diving vessels, Command and Control vessels, and various naval craft of special design or purpose.

The vessel type appearing in the classification notation may be requested by the Naval Administration to include such type-specific identifier as noted above; if it is requested, it would be appended as a further descriptor to one of the following categorical vessel type notations:

9.1 Naval Combatant

The **NAVAL COMBATANT** notation will be assigned to a naval vessel that is intended to operate in higher-threat environments, and whose primary mission involves the use of own-vessel weapons (e.g., guns, missiles) within a theater of operations. Typical vessels covered under this type are cruisers, destroyers, frigates, and corvettes.

9.3 Naval Force Projection

The **NAVAL FORCE PROJECTION** notation will be assigned to a naval vessel that is intended to operate in higher-threat environments, and whose primary mission generally involves the conveyance of military personnel and/or other craft (e.g., aircraft, helicopters, landing craft) to and within a theater of operations. Typical vessels covered under this type are conventional powered (non-nuclear) aircraft carriers, helicopter carriers, amphibious assault vessels, and amphibious support vessels.

9.5 Naval Support

The **NAVAL SUPPORT** notation will be assigned to a naval vessel that is intended to operate in lower-threat environments, for example in escort duties or in Economic Exclusion Zone (EEZ) protection, or where threat has been reduced through other means. Typical vessels covered under this type are for combat support (fleet replenishment, landing ships), logistic support (supply, replenishment), and mine warfare (mine hunters, mine sweepers).

9.5.1 US NAVAL AUXILIARY SERVICE *(1 July 2021)*

The **US NAVAL AUXILIARY SERVICE** notation will be assigned to a naval vessel that has been constructed to military specifications (Mil-Specs) in lieu of ABS or other IACS Society Rules and is transferring into ABS Class. Typical vessels covered under this type are for combat support (fleet replenishment, landing ships), logistic support (supply, replenishment), and mine warfare (mine hunters, mine sweepers).

9.7 Coast Guard

The **COAST GUARD** notation will be assigned to a Coast Guard vessel whose primary mission is maritime safety, mobility, law enforcement, environmental protection and local or national security or defense. Typical vessels covered under this type are cutters, patrol boats, buoy tenders and icebreakers; and such will be appended as a further descriptor of the specific vessel type.

9.9 Naval Craft *(1 July 2021)*

The **NAVAL CRAFT** notation will be assigned to a naval vessel that is intended for higher-speed, shorter-range operations, for example in coastal areas. Typical vessels covered under this type are patrol craft and fast attack craft. [ABS should be consulted prior to application or use of the *INSG Guide* for smaller vessels that operate at high speed; depending upon speed and length, the ABS *Rules for Building and Classing Light Warships, Patrol and High-Speed Naval Vessels*, or portions of it, may be preferred or required in lieu of the classification requirements in the *INSG Guide*.] This notation may also have additional descriptors added such as **COASTAL** or **RIVERINE**.

9.9.1 Coastal Craft

The **COASTAL** notation is to be assigned to a craft that is intended to operate on a coastal voyage with a maximum distance from safe harbor of 300 miles and a maximum voyage of 150 miles from a safe harbor when operating in the Winter Seasonal Zones as indicated in Annex II of the International Conference on Load Lines, 1966. Coastal Craft are not permitted to perform transoceanic movements.

9.9.2 Riverine Craft

The **RIVERINE** notation is to be assigned to a craft that is intended to operate in rivers, harbors, and coast lines with a maximum distance from safe harbor of 50 miles. Riverine Craft are not permitted to perform transoceanic movements.

9.11 Government Special Purpose

The **GOVERNMENT SPECIAL PURPOSE** notation will be assigned to a Government vessel not otherwise addressed above whose primary mission is maritime safety, mobility, law enforcement, environmental protection and local or national security or defense. Typical vessels covered under this type are border patrol boats, local harbor authority patrol boats, etc.; and such will be appended as a further descriptor of the specific vessel type.

11 Service Route

See 1-1-3/7 .

13 Optional Notations

The optional notations available for naval vessels are identified in Part 6. The notations mentioned below are also optional but are mentioned here for early awareness to end users of the *INSG Guide*; these notations involve global analyses of the vessel and, if elected, should be planned for and decided upon early in the acquisition process.

13.1 Dynamic Loading Approach (SH-DLA)

Vessels which have been built to plans reviewed in accordance with an acceptable procedure and criteria for calculating and evaluating the behavior of hull structures under dynamic loading conditions, in addition to full compliance with other requirements of the Rules or Guides, will be classed and distinguished in the *Record* by the notation **SH-DLA** placed after the appropriate hull classification notation. The application of the dynamic loading approach is optional. See Section 3-2-20 of the *INSG Guide* for details.

13.3 Spectral Fatigue Analysis (SFA)

In addition to full compliance with other requirements of the Rules or Guides, where a spectral fatigue analysis is performed satisfactorily in accordance with an acceptable procedure and criteria, and the vessel is built in accordance with plans approved on the basis of the results of such analysis, the vessel will be distinguished in the *Record* by the notation **SFA (year)**. The notation denotes that the designated fatigue life value is equal to 20 years or greater. The **(year)** will reflect the designated fatigue life, equal to 20 years or more (in 5-year increments) as specified by the applicant. See Section 3-2-20 of the *INSG Guide* for details.

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CHAPTER 11

Classification Requirements for Naval Ships

SECTION 4

Rules for Classification*(2018)*

1 Application

This Chapter specifies only the unique requirements applicable to military vessels and other Government-owned vessels in non-commercial service. This Chapter is always to be used with Chapter 1 of these *Rules for Conditions of Classification (Part 1)*.

It contains the terms and conditions for achieving ABS Classification, retaining a vessel in class, and situations that could result in suspension or cancellation of class. It also addresses class notations assigned to vessels; optional notations available; acceptance of alternatives; and application of the *INSG Guide*.

Commercial vessels are required to comply with many national and international laws, codes, and standards. Most Government-owned vessels are exempt from such requirements; however, some choose to comply voluntarily. For various reasons, there has been a growing trend for Governments to selectively invoke commercial codes and standards, and in many cases to invoke classification.

All the various sets of ABS Rules contain provisions for accepting alternative arrangements, details and standards, and allow for special considerations in applying the Rules to Government vessels, and especially to military vessels. However, since they were written to apply to commercial vessels they include requirements and language that can at times make them difficult or time consuming to navigate when applying them to non-commercial vessels, and especially to military combatant vessels. The *INSG Guide* was developed to address this by providing the same technical baseline of standards, but tailored where appropriate and written in a manner that better suits its direct application for the classification of military vessels and other Government-owned vessels in non-commercial service.

3 Selection of Rules and Guides

The appropriate edition of ABS Rules and Guides to apply for classification is, in general, based on the contract date for construction between the shipbuilder and the prospective Owner (e.g., Rules and Guides which became effective on 1 July 2014 are not applicable to a vessel for which the contract for construction was signed on 30 June 2014) and is to be specified in the ABS Request For Class Agreement.

References are made throughout the *INSG Guide* to various documents without year notations. In such cases, the edition of any contained references to other ABS Rules or Guides or to national or international standards is to be taken as the edition that was in effect on the effective date of the ABS Rules or Guide to which the vessel will be classed, unless the client or Naval Administration requests or proposes that a more recent edition of such referenced standards be applied and ABS agrees the more recent edition is acceptable.

5 Novel Features

Guidance for the special consideration of novel features is available in the ABS *Guidance Notes on Risk Assessment Applications for the Marine and Offshore Industries* and the ABS *Guidance Notes on Review and Approval of Novel Concepts*. The same would apply in the case of new technology that the Rules or Guides may not yet address. In all such cases, ABS should be consulted with regard to proper application of the Rules and Guides.

7 International Standards

The Committee will consider special arrangements or details of hull, equipment or machinery which can be shown to comply with recognized international standards provided they are proven to be not less effective than the Rules or Guides.

9 Naval Administration Standards

The Committee will consider special arrangements or details of hull, equipment or machinery which can be shown to comply with standards recognized by the Naval Administration of the country in which the vessel is registered, provided they are proven to be no less effective than the Rules or Guides.

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SECTION 5
Other Regulations

1 International Conventions or Codes

Upon request of the Naval Administration, ABS will survey a new or existing vessel for compliance with the provisions of the International Conventions and Codes in 1-1-5/3, and certify thereto in the manner prescribed in the Convention or Code.

Where applicable, the IACS Unified Interpretations for each International Convention and Code will be applied as recognized interpretations for plan approval and survey, unless the Naval Administration provides interpretations and they are found to be no less effective than those given by IACS.

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SECTION 6

Naval Administration Requirements

1 Ship Specifications

Ship specifications capture Naval Administration requirements that are contractually passed to designers and builders and may be written in terms of performance level specifications, system level specifications, detail level specifications, or a combination of these. Typically included (if not called out directly in the body of the contract) will be the Naval Administration requirement to the designer or builder to obtain Classification and various certifications required from other Certification Authorities, along with additional technical requirements the Naval Administration may have for specific systems, equipment, or materials. Those developing and approving ship specifications are responsible for avoiding conflict with the requirements in the Rules and Guides. Where uncertainty exists on the potential for conflict, ABS should be consulted to ensure the Rules and Guides are being properly applied and interpreted.

With respect to classification, any additional requirements contained in ship specifications that relate to systems, equipment or materials that are addressed by the Rules and Guides are treated as follows.

- Where such requirements are found by ABS to be less effective than the Rules or Guides, the requirements in the Rules or Guides must be met in order to obtain ABS Classification.
- Where such requirements are considered to be equivalent, they may be accepted as such by ABS as an alternative to the requirements in the Rules or Guides, provided additional data or analysis, if necessary, is submitted for review to document the technical justification for such acceptance.
- Where such requirements do not conflict with and are merely in excess of the requirements in the Rules or Guides, they are considered Owner's requirements and not addressed by the verification activities conducted by ABS for vessel classification, they are subject to such verification as deemed necessary by the Owner. However, ABS can include verification of these additional requirements if specifically requested as Statement of Fact certifications and indicated as such in the ABS Request For Class Agreement, and provided any special criteria that may be needed regarding their verification is provided to ABS.

Specifications are not generally required to be submitted; where required with respect to certain systems and equipment, they are included in the listing of plans and data to be submitted for same.

3 Equipment Specifications

The Request For Class Agreement includes the requirement that ABS be informed of all equipment and materials for the vessel that will be procured from sources outside the builder. Equipment procurement specifications are typically generated based on the ship specifications to provide equipment manufacturers

and suppliers the associated technical details and performance requirements, but may also contain further additional requirements to address integration or interface needs not addressed in the ship specifications. Those developing and approving procurement specifications are responsible for avoiding conflict with the requirements in the Rules and Guides. Where uncertainty exists on the potential for conflict, ABS should be consulted to ensure the Rules and Guides are being properly applied and interpreted.

With respect to ABS certification of equipment or materials, any additional requirements contained in procurement specifications that relate to systems, equipment or materials that are addressed by the Rules and Guides are treated as follows.

- Where such requirements are found by ABS to be less effective than the Rules or Guides, the requirements in the Rules or Guides must be met in order to obtain ABS certification
- Where such requirements are considered to be equivalent, they may be accepted as such by ABS as an alternative to the requirements in the Rules or Guides, provided additional data or analysis, if necessary, is submitted for review to document the technical justification for such acceptance
- Where such requirements do not conflict with and are merely in excess of the requirements in the Rules or Guides, they are considered Owner's requirements and not addressed by the verification activities conducted by ABS for equipment/material certification, they are subject to such verification as deemed necessary by the Owner; however, ABS can include verification of these additional requirements if specifically requested by the manufacturer/supplier as Statement of Fact certifications, and provided any special criteria that may be needed regarding their verification is provided to ABS

Specifications are not generally required to be submitted; where required with respect to certain systems and equipment, they are included in the listing of plans and data to be submitted for same.

5 Design Considerations

Due to the unique nature of the operational missions of naval vessels, there are design considerations that are addressed by Naval Administration requirements with regard to operational scenarios and threat environments unique to naval vessels and are not directly addressed by classification requirements or the verification activities associated with classification. Such design considerations include aspects related to survivability, shock, signatures, weapons operations, aircraft operations, communications, underway replenishment, and various types and degrees of protection of certain spaces and systems to ensure their continued operation after damage or a threat event. Classification requirements provide a certain inherent level of protection from fire, collision, grounding, flooding, weapon-firing effects, etc.

In addition to requirements to address above water threats, below water threats, and other combat mission related capabilities and systems, the Naval Administration requirements will also identify desired margins to be incorporated into the design to account for normal growth expected during design and build, or for planned growth to account for future upgrades or to accommodate changes to mission capabilities throughout the service life of the vessel. Such margins typically are in terms of space, weight, volume, equipment ratings, power generation, power distribution, cooling, etc.

These design considerations translate into system features, system performance, material selections, fabrication and welding details, and other aspects that are inherent to the final overall design. All such additional requirements of the Naval Administration are to be accounted for, as appropriate, in the plans and data required to be submitted for classification.

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CHAPTER 11
Classification Requirements for Naval Ships

SECTION 7
Submission of Plans

1 Units

The *INSG Guide* is written in three systems of units, viz., SI units, MKS units and US customary units. Each system is to be used independently of any other system. Unless indicated otherwise, the format of presentation in the *INSG Guide* of the three systems of units is as follows:

SI units (MKS units, US customary units)

3 Hull Plans

Plans showing the scantlings, arrangements, and details of the principal parts of the hull structure of each vessel to be built under survey are to be submitted and approved before the work of construction is commenced. These plans are to indicate clearly the scantlings and the details of welding, and they are to include such particulars as the design draft and design speed. Where provision is to be made for any special type of cargo or for any exceptional conditions of loading, whether in ballast or with cargo, particulars of the weights to be carried and of their distribution are also to be given.

Naval vessels, especially combatants, are subject to specific mission loads or other global or local loads due to mission systems or threat protection features required to address combat operation needs such as design for shock, ballistic protection, signature reduction, etc. For such vessels, the plans submitted are to reflect scantlings and structural arrangements and details that, in addition to the requirements for classification, have already taken into account these and similar design considerations regarding structural adequacy and performance required of the vessel, but is not required for or addressed by class.

5 Machinery Plans

Plans showing the boilers, main propulsion engines, reduction gears, shafting and thrust bearing foundations (including holding-down bolts), machinery general arrangement, installation and equipment are to be submitted and approved before manufacturing, fabrication or construction, and before proceeding with work regarding modifications or alterations to previously approved systems or equipment. In addition, a Ship Equipment List comprising a listing of all items that are to be fitted on the ship, including the item label, model/type, and manufacturer, is to be submitted.

Naval vessels, especially combatants, are subject to specific mission loads and have installed systems unique to such vessels for threat protection or features required to address combat operation needs such as design for shock, CBR attack, signature reduction, etc. Some unique systems are addressed in the *INSG Guide* while others (referred to in the *INSG Guide* as mission systems) are not addressed by classification

requirements; however, they do rely upon ship systems for power, cooling, passive and active firefighting, etc.

Plans for mission systems are not required to be submitted; however, the plans required by the *INSG Guide* are to include information adequate to assess the loads and demands such systems place on ship systems and allow for proper evaluation of the dependencies and interfaces between ship systems and mission systems.

ABS should be consulted prior to application or use of the *INSG Guide* to ensure systems are properly identified as ship systems or mission systems and to clarify what constitutes the points of interface between them. Classification requirements apply to ship systems up to the point of interface with mission systems in terms of both the functional and physical interface. To meet the intent of the Rules, such interfaces are normally best determined by first identifying the functional interface, then the physical interface.

7 Integrated Test Plan

An Integrated Test Plan (ITP) is to be submitted for review that documents the overall structure and objectives of the test and evaluation (T&E) program and includes a comprehensive listing and schedule of inspections and tests to be conducted with regard to vendor facilities, shipyard fabrication shop testing, ship installation testing, operational testing, and all T&E conducted during sea trails. Inspections and tests that require ABS Surveyor attendance are to be indicated as such.

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APPENDIX **1**

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PART 1

APPENDIX 1

SECTION 1

Comparison of Existing Classification Rules vs. 2018 Classification Rules

Steel Vessels/Generic

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1-1-2/5	Special Notations	1-1-2/5
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Existing Class	*Title*	*Class 2018*
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Existing Class	*Title*	*Class 2018*
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Steel Vessels Under 90 Meters (295 Feet) in Length

Under 90m 2018	*Title*	*Class 2018*
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1-1-3/1.1	General	1-2-3/1
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Under 90m 2018	*Title*	*Class 2018*
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Offshore Support Vessels

OSV 2018	*Title*	*Class 2018*
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OSV 2018	*Title*	*Class 2018*
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OSV 2018	*Title*	*Class 2018*
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Steel Vessels for Service on Rivers and Intracoastal Waterways

River 2018	*Title*	*Class 2018*
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Steel Barges

Barge 2018	*Title*	*Class 2018*
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Barge 2018	*Title*	*Class 2018*
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Steel Floating Dry Docks

Dry Dock 2018	*Title*	*Class 2018*
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Underwater Vehicles, Systems and Hyperbaric Facilities

UWVS 2018	*Title*	*Class 2018*
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UWVS 2018	*Title*	*Class 2018*
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Bulk Carriers for Service on the Great Lakes

GLBC 2018	*Title*	*Class 2018*
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GLBC 2018	*Title*	*Class 2018*
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Yachts

Yacht 2018	*Title*	*Class 2018*
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Yacht 2018	*Title*	*Class 2018*
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Vessels Intended to Carry Compressed Natural Gases in Bulk

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CNG 2005	*Title*	*Class 2018*
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International Naval Vessels

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INSG 2018	*Title*	*Class 2018*
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