



RULES FOR

**CONDITIONS OF CLASSIFICATION – HIGH-SPEED
CRAFT
2018**

PART 1

(Updated December 2018 – see next page)

**American Bureau of Shipping
Incorporated by Act of Legislature of
the State of New York 1862**

**© 2017-2018 American Bureau of Shipping. All rights reserved.
1701 City Plaza Drive
Spring, TX 77389 USA**

Updates

December 2018 consolidation includes:

- January 2018 version plus Notice No. 1

Rule Change Notice (2018)

The effective date of each technical change since 1993 is shown in parentheses at the end of the subsection/paragraph titles within the text of each Part. Unless a particular date and month are shown, the years in parentheses refer to the following effective dates:

(2000) and after	1 January 2000 (and subsequent years)	(1996)	9 May 1996
(1999)	12 May 1999	(1995)	15 May 1995
(1998)	13 May 1998	(1994)	9 May 1994
(1997)	19 May 1997	(1993)	11 May 1993

Listing by Effective Dates of Changes from the 2017 Rules

Notice No. 1 (effective on 1 March 2017) to the 2017 Rules, which is incorporated in the 2018 Rules, is summarized below.

EFFECTIVE DATE 1 March 2017 – shown as (1 March 2017)

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
1-1-1/7	Scope of Classification	To align with the other sections of Part 1 regarding disclaimers of liability for the responsibilities of vessel owners/operators in this article.
1-1-6/11 (New)	Plan Submittal	To align ABS plan submittal process with our legal duty to protect client and third party intellectual property rights.

Notice No. 2 (effective on 1 May 2017) to the 2017 Rules, which is incorporated in the 2018 Rules, is summarized below.

EFFECTIVE DATE 1 May 2017 – shown as (1 May 2017)

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
1-1-4/3.1	Effective Date	To remove the application of the six-month rules for Guides, which are meant for immediate implementation. (Incorporates Notice No. 2)

EFFECTIVE DATE 1 January 2018 – shown as (2018)

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
1-1-A2/5.1.5	Duplicate Product Design Assessment	To clarify ABS policy for PDA-DUP issuance, confirmed by ABS Programs.

Listing by Effective Dates of Changes from the 2018 Rules

Notice No. 1 (effective on 1 December 2018) to the 2018 Rules is summarized below.

EFFECTIVE DATE 1 December 2018 – shown as *(1 December 2018)*

<i>Part/Para. No.</i>	<i>Title/Subject</i>	<i>Status/Remarks</i>
1-1-A2/5.5	Product Quality Assurance Certification (PQA) Tier 4 (IACS UR Z26 Alternative Certification Scheme)	To include products that do not require unit certification in the program to provide end users with a report/certificate from ABS.

PART

1

Foreword

Part 1, “Conditions of Classification” has been consolidated into a generic booklet, entitled *Rules for Conditions of Classification – High-Speed Craft (Part 1)* for all commercial high-speed craft and high-speed naval craft. The purpose of this consolidation was to emphasize the common applicability of the classification requirements in “Part 1” to ABS-classed high-speed craft, and thereby make “Part 1” more readily a common “Part” of the various ABS Rules and Guides, as appropriate.

Accordingly, the subject booklet, *Rules for Conditions of Classification – High-Speed Craft (Part 1)*, is to be considered as being applicable to and comprising a “Part” of the following ABS Rules and Guides:

- *Rules for Building and Classing High-Speed Craft (HSC Rules)*
- *Rules for Building and Classing High-Speed Naval Craft (HSNC Rules)*

Any unique “Conditions of Classification” requirements for a specific type of high-speed craft are specified in Chapters 2 and 3 of this Part 1. The generic requirements in Chapter 1 are to be used together with the applicable supplemental requirements for the specific type of high-speed craft.

Rules for Conditions of Classification – High-Speed Craft

CONTENTS

CHAPTER 1	Scope and Conditions of Classification	1
Section 1	Classification	4
Section 2	Suspension and Cancellation of Classification	6
Section 3	Classification Symbols and Notations.....	10
Section 4	Application	14
Section 5	Regulations	23
Section 6	Submission of Plans	25
Section 7	Conditions for Surveys After Construction.....	27
Section 8	Fees	29
Section 9	Disagreement.....	30
Section 10	Limitation of Liability.....	31
Section 11	Hold Harmless	32
Section 12	Time Bar to Legal Action.....	33
Section 13	Arbitration.....	34
Appendix 1	Load Line and Tonnage Marks	35
Appendix 2	ABS Type Approval Program.....	42
Appendix 3	Tiers of Type Approval.....	54
CHAPTER 2	Classification Requirements for High-Speed Craft	56
Section 1	Classification	58
Section 2	Classification Symbols and Notations.....	59
Section 3	Regulations	60
Section 4	International Association of Classification Societies (IACS)	61
Section 5	Submission of Plans	62
Section 6	Conditions for Surveys After Construction.....	63
CHAPTER 3	Classification Requirements for High-Speed Naval Craft.....	64
Section 1	Classification	65
Section 2	Classification Symbols and Notations.....	66
Section 3	Approvals and Certifications Outside of Classification	67
Section 4	Submission of Plans	68

CHAPTER 1 Scope and Conditions of Classification

CONTENTS

SECTION 1	Classification	4
1	Process	4
3	Certificates and Reports	4
5	Representations as to Classification.....	5
7	Scope of Classification.....	5
SECTION 2	Suspension and Cancellation of Classification	6
1	General	6
3	Notice of Surveys	6
5	Special Notations	6
7	Suspension of Class	6
9	Lifting of Suspension.....	8
11	Cancellation of Class	9
13	Alternative Procedures for Certain Types of Craft.....	9
SECTION 3	Classification Symbols and Notations	10
1	Classification Symbols	10
3	Classification Type.....	10
5	Class Notation.....	10
7	Craft Not Built Under Survey	13
9	Equipment Symbol.....	13
11	✘ AMS Notation	13
13	AMS Notation.....	13
15	ACCU or ABCU Notations.....	13
17	Centralized or Automatic Control Systems	13
19	PORT Notation.....	13
	TABLE A Principal Elements	11
	TABLE B Structural Notations	11
	TABLE C Machinery Notations	12
	TABLE D Control Notations	12
SECTION 4	Application	14
1	Application of Rules	14
1.1	General.....	14
1.3	Application.....	14
1.5	Application Limits	14

3	Effective Date of Rule Change.....	15
3.1	Effective Date	15
3.3	Implementation of Rule Changes	15
5	Direct Analyses	16
5.1	Required Analyses.....	16
5.3	Supplementary Analyses	17
5.5	Analysis Scope and Documentation	17
5.7	Guidance for Direct Analysis	17
7	Design by Testing	17
9	Novel Features.....	17
11	Alternatives	18
11.1	General.....	18
11.3	National Regulations and Naval Administration Standards.....	18
11.5	Other Rules	18
11.7	Order of Precedence	18
11.9	ABS Type Approval Program.....	18
13	Special Consideration	22
15	Sea Trials.....	22
TABLE 1A	Criteria for Steel and Aluminum High-Speed Craft.....	16
TABLE 1B	Criteria for FRP High-Speed Craft	16
TABLE 2	Criteria for High-Speed Naval Craft	16

SECTION 5 Regulations..... 23

1	General	23
3	International Conventions or Codes	23
5	International Code of Safety for High-Speed Craft, 2000	23
7	Governmental Regulations	24
7.1	Governmental Authorization	24
9	ABS Surveyor’s Safety and ABS Occupational Health and Safety Management Systems (OHSMS) Manual.....	24

SECTION 6 Submission of Plans 25

1	General	25
3	Hull Plans.....	25
5	Machinery Plans and Data.....	26
7	Additional Plans	26
9	FRP Builder Process Description	26
11	Plan Submittal.....	26

SECTION 7 Conditions for Surveys After Construction 27

1	Damage, Failure and Repair.....	27
1.1	Examination and Repair	27
1.3	Repairs	27
1.5	Suspension of Classification.....	27
1.7	Representation	27
3	Notification and Availability for Survey.....	28

SECTION 8 Fees	29
SECTION 9 Disagreement	30
1 Rules or Guides	30
3 Surveyors.....	30
SECTION 10 Limitation of Liability	31
SECTION 11 Hold Harmless	32
SECTION 12 Time Bar to Legal Action	33
SECTION 13 Arbitration	34
APPENDIX 1 Load Line and Tonnage Marks	35
1 Load Line Markings for Ocean-going Craft – Millimeters	35
3 Load Line Markings for Ocean-going Craft – Inches	36
5 Load Line Markings for Great Lakes Craft – Inches	37
7 Tonnage Mark Diagram – For Craft Operating with Dual Tonnage – Millimeters.....	38
9 Tonnage Mark Diagram – For Craft Operating with Dual Tonnage – Inches	39
11 Tonnage Mark Diagram – For Craft Operating with Single Low Tonnage – Millimeters.....	40
13 Tonnage Mark Diagram – For Craft Operating with Single Low Tonnage – Inches	41
APPENDIX 2 ABS Type Approval Program	42
1 General	42
3 Limitations.....	43
5 Process	43
5.1 Product Design Assessment (PDA) Tier 2.....	43
5.3 Manufacturing Assessment (MA)	45
5.5 Product Quality Assurance Certification (PQA) Tier 4 (IACS UR Z26 Alternative Certification Scheme)	46
5.7 Certificates	47
5.9 Terms and Conditions of the Request for Product Type Approval and Agreement	49
FIGURE 1 Process of the Type Approval Program	52
APPENDIX 3 Tiers of Approval	54
Tier 1 – Manufacturer’s Certification (MC).....	54
Tier 2 – Product Design Assessment (PDA).....	54
Tier 3 – Type Approval (TA).....	54
Tier 4 – Product Certification via Product Quality Assurance (PQA).....	55
Tier 5 – Unit Certification via Survey During Fabrication (UC)	55

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 1 Classification

1 Process (*1 September 2011*)

The Classification process consists of

- a) The development of Rules, Guides, standards and other criteria for the design and construction of marine craft 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, the craft are to comply with both the hull and the machinery requirements of the Rules and Guides.

3 Certificates and Reports (*1 September 2011*)

3.1

Plan review and surveys during and after construction are conducted by ABS to verify to itself and its committees that a craft, 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 craft'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

ABS may release craft 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 craft'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 (also known as outstanding recommendations), transfers, suspensions, withdrawals, cancellations and reinstatements of class, and other related information as may be required.

5 Representations as to Classification (2012)

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 and marine engineers, Owners, operators, masters, Naval Administrations, craft's officers, and crew nor as a substitute for the quality control procedures of shipbuilders, engine builders, steel makers, suppliers, manufacturers and sellers of marine craft, 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 craft Owner, Naval Administration, or any other craft Owner designated by the Naval Administration, 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 craft Owner, Naval Administration 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 craft, 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, Naval Administration or any 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 craft, 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 craft 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 craft does not rest upon ABS. For craft not receiving an **OE** notation as indicated in Section 1-1-3 (see 1-1-3/Table B), the design significant wave height is not to exceed the values in 3-2-2/Table 1.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 2 Suspension and Cancellation of Classification

1 General (*1 September 2011*)

The continuance of the Classification of any craft 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 craft 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 and Cargo Gear Surveys. Suspension or cancellation of class may take effect immediately or after a specified period of time.

1.1

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.

1.3

Failure to permit the unscheduled surveys referred to in 1-1-2/1.1 above shall result in the suspension or cancellation of class.

3 Notice of Surveys (*2012*)

It is the responsibility of the Owner or Naval Administration to ensure that all surveys necessary for the maintenance of class are carried out at the proper time. ABS will notify the Owner or Naval Administration of upcoming surveys and outstanding recommendations. This may be done by means of a letter or other communication. The non-receipt of such notice, however, does not absolve the Owner or Naval Administration from its 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 (*1 July 2005*)

Suspension of classification is a withdrawal of all representations by ABS as to a craft or structure.

This subsection defines the normal circumstances under which Class will be suspended and the Certificate of Classification will become invalid. In the case where ABS has been notified of a condition of national emergency as 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.

7.3

Class will be suspended and the Certificate of Classification will become invalid, from the date of any use, operation, loading condition, or other application of any craft 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 (1 October 2007)

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

7.6 (1 October 2007)

Class will be subject to a suspension procedure if recommendations issued by the Surveyor are not carried out by their due dates and no extension has been granted.

7.7

Classification may be suspended, in which case the Certificate of Classification will become invalid, upon failure to submit any damage, failure, deterioration or repairs for examination upon the first opportunity or, 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, as referred to in 7-1-1/7.

7.9

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 craft 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 craft 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 craft is under attendance for completion prior to returning to service.

(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 craft is attended and the attending Surveyor(s) so recommend(s) after the following has been carried out:

- Annual Survey; and
- Re-examination of recommendations; 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 craft is without outstanding recommendation regarding underwater parts.

(1 July 2005) If the craft 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 craft 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.

7.11 (1 July 2005)

When a craft is intended for a demolition voyage with any periodical survey overdue, the craft’s class suspension may be held in abeyance and consideration may be given to allow the craft 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 craft in satisfactory condition to proceed for the intended voyage.

7.13 (1 September 2011)

If due to circumstances reasonably beyond the Owner’s or ABS’s control (limited to such cases as damage to the craft; unforeseen inability of ABS to attend the craft 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 craft is not in a port where the overdue surveys can be completed at the expiry of the periods allowed above, ABS may allow the craft 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 craft’s records; and
- ii) Carries out the due and/or overdue surveys and examination of recommendations at the first port of call when there is an unforeseen inability of ABS to attend the craft in the present port, and
- iii) Has satisfied itself that the craft 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 craft 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.

7.15 (1 February 2013)

When a craft is intended for a single voyage from laid-up position to repair yard with any periodical survey overdue, the craft’s class suspension may be held in abeyance and consideration may be given to allow the craft to proceed on a single direct ballast voyage from the site of lay up to the repair yard, upon agreement with the Flag Administration, provided ABS finds the craft 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 craft 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 craft 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 recommendations upon satisfactory completion of the overdue recommendation. However, the craft 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 craft's class will be canceled.

11.3

A craft's class is canceled immediately when a craft proceeds to sea without having completed recommendations 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 outstanding recommendations, class will be canceled. A longer suspension period may be granted for craft which are either on National Emergency Service, 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 craft cancelled upon the craft's sale or transfer without prior written notice to ABS.

11.9 (1 August 2016)

For craft 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 craft'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 Craft (1 September 2011)

Alternatives to 1-1-2/7.9 procedures for automatic suspension of class and 1-1-2/11.5 procedures for cancellation of class may be applied to military craft, commercial craft owned or chartered by governments which are utilized in support of military operations or service, laid-up craft, or fishing craft.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 3 Classification Symbols and Notations (2012)

Note: A listing of Classification Symbols and Notations available to the Owners of craft 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 craft or service.

1 Classification Symbols

Consists of a single symbol, single figure or a single letter that represents the design features of a craft (e.g. ☒, A1, Ⓜ, etc.).

3 Classification Type

Consists of words that describe a craft’s specific mission parameters (e.g., **High-Speed Craft, Naval Craft**). See Section 1-2-2 or 1-3-2, as applicable.

5 Class Notation (2015)

Craft which have been built to the satisfaction of the ABS Surveyors to the applicable requirements of the Rules, Guide, or equivalent and approved by the Committee, may be classed and distinguished in the *Record* by the symbols ☒ A1 Ⓜ HSC Craft Type ☒ AMS indicating compliance with the hull, equipment, and machinery requirements of the *HSC Rules* or *HSNC Rules*, as applicable. Classification notation consists of words, acronyms, letters and abbreviations that describe a craft’s restrictions, service or applicable survey characteristics.

For the purpose of ABS classification of a craft, typically, one or more symbols and notations that will denote the craft’s classification will be assigned. A typical arrangement of classification will follow the structure below:

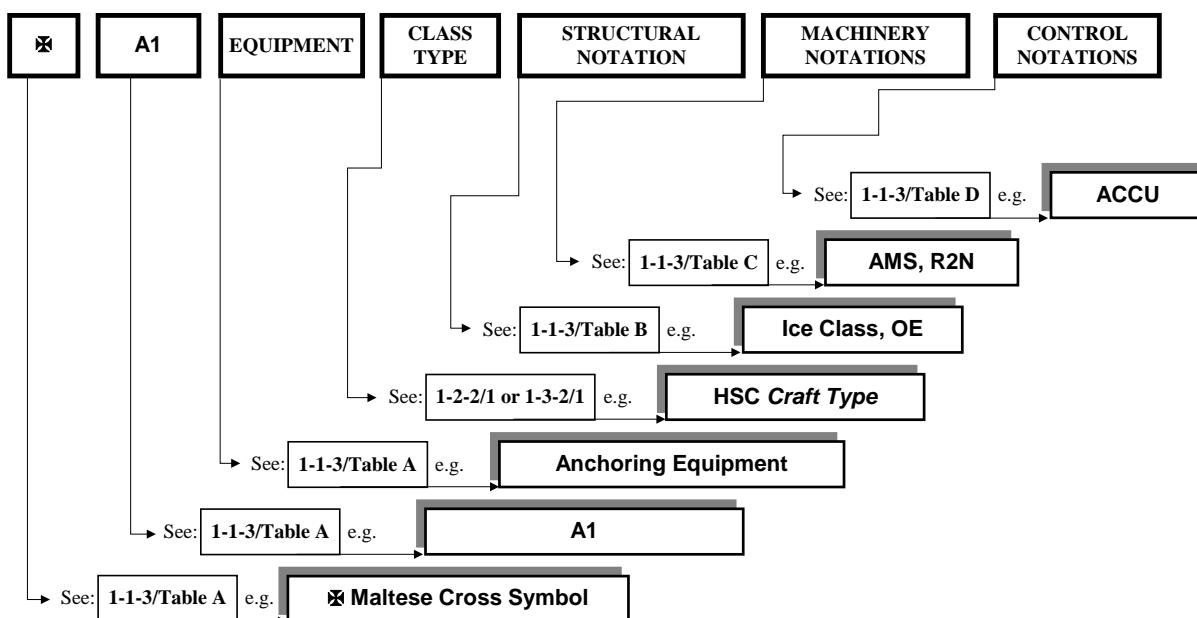


TABLE A
Principal Elements

<i>SYMBOL</i>	<i>DESCRIPTION</i>	<i>REFERENCE</i>
☒	This Maltese Cross symbol will be assigned to vessels for which hull construction and/or manufacture of its machinery and components are carried out under ABS survey. For a vessel, constructed under survey of another recognized Classification Society or Authority, the symbol ☒ will be omitted from the classification.	SVR
A1	This symbol indicates compliance with the Hull requirements of the ABS Rules or their equivalent. The symbol A1 is followed by the appropriate vessel type notation.	SVR, HSC & HSNC
Ⓔ	This symbol signifies that the anchoring/mooring equipment on the vessel are in compliance with the requirements of the Rules, or with requirements corresponding to the service limitations noted in the vessel's classification, which has been approved for the particular service of the Rules. The Ⓔ is placed after the symbol ☒ A1 .	HSC 3-5-1 HSNC 3-5-1
HSC: HSNC: SVR:	Rules for Building and Classing High-Speed Craft Rules for Building and Classing High-Speed Naval Craft Rules for Building and Classing Steel Vessels	

TABLE B
Structural Notations (2016)

<i>TYPE</i>	<i>DESCRIPTION</i>	<i>REFERENCE</i>
Ice Class PC1, PC2, PC3, PC4, PC5, PC6, PC7	These ice class notations are assigned to self-propelled vessels to indicate suitability of operation in ice.	SVR 6-1-1/3.1
Ice Class PC1, Enhanced through PC7, Enhanced	These ice class notations are assigned to self-propelled vessels to indicate compliance with the Polar Class requirements plus additional applicable ABS requirements.	SVR 6-1-4/1.1
Ice Class A0, B0 C0, D0	These ice class notations are assigned to self-propelled vessels to indicate suitability of operation in first-year ice.	SVR 6-1-5/3.1
Ice Strengthening I AA, I A, I B, I C	These are the Baltic ice strengthening notations and assigned to vessels designed to Finish-Swedish Ice Class Rules and are I AA , I A , I B , and I C .	SVR 6-1-6/3.1
OE	(2016) This optional notation indicates that the structure has been reviewed based on the limitations given in a particular Operational Envelope . The operational envelope is given in terms of speed and significant wave height in the most unfavorable combination of length and direction of the wave. The operational envelope is to be part of the operating manual for the craft, and is to be used in the operational theater of the craft. The OE notation will be assigned for the craft which is intended to operate in the various sea-states exceeding the design significant wave heights defined in 3-2-2/Table 1.	HSC: 3-2-1/9 HSNC 3-2-1/9
SH-DLA	This notation, Dynamic Load Approach , is assigned to vessels which have been built to plans reviewed in accordance with an acceptable criteria for calculating and evaluating the behavior of the hull structures under dynamic loading conditions.	HSC 3-1-3 HSNC 3-1-3 HSC Direct Analysis Guidance
SFA	This notation, Spectral Fatigue Analysis , is assigned to craft where a spectral fatigue analysis is performed satisfactorily in accordance with an acceptable procedure and criteria, and the craft is built in accordance with plans approved on the basis of the results of such analysis.	SFA Guide
SVR: HSC: HSNC: HSC Direct Analysis Guidance: SFA Guide:	Rules for Building and Classing Steel Vessels Rules for Building and Classing High-Speed Craft Rules for Building and Classing High-Speed Naval Craft Guidance Notes on Structural Direct Analysis for High-Speed Craft Guide for Spectral Fatigue Analysis for Vessels	

TABLE C
Machinery Notations

<i>NOTATION</i>	<i>DESCRIPTION</i>	<i>REFERENCE</i>
☒ AMS	This notation is assigned to machinery and pressure vessels constructed and installed to ABS Rules requirements.	HSC Part 4 HSNC Part 4
AMS	This notation is assigned to machinery and boilers that have not been constructed and installed under ABS survey, but found satisfactory with ABS Rules requirements.	HSC Part 4 HSNC Part 4
R1	This is an optional notation assigned to a vessel fitted with multiple propulsion machines but only a single propulsor and steering system.	HSC 4-3-5 HSNC 4-3-7
R2	This is an optional notation assigned to a vessel fitted with multiple propulsion machines and also multiple propulsors and steering system.	HSC 4-3-5 HSNC 4-3-7
R1-S	This is an optional notation assigned to a vessel fitted with only single propulsor but having the propulsion machinery arranged in separate spaces such that a fire or flood in one space will not affect the propulsion machinery in the other space.	HSC 4-3-5 HSNC 4-3-7
R2-S	This is an optional notation assigned to a vessel fitted with multiple machines and propulsors, and associated steering systems arranged in separate spaces such that a fire or flood in one space will not affect the propulsion machine(s) and propulsor(s), and associated steering systems in the other space.	HSC 4-3-5 HSNC 4-3-7
R2-N	This is an optional notation assigned to a vessel fitted with multiple machines and propulsors, and associated steering systems arranged in longitudinally-separated spaces such that failure or penetration of a single watertight transverse bulkhead will not affect the propulsion machine(s) and propulsor(s), and associated steering systems in the other space.	HSC 4-3-5 HSNC 4-3-7
+ affixed to R1, R2, R1-S & R2-S	This notation signifies that the redundant propulsion is capable of maintaining position under adverse weather conditions to avoid uncontrolled drift.	HSC 4-3-5 HSNC 4-3-7
HSC:	Rules for Building and Classing High-Speed Craft	
HSNC:	Rules for Building and Classing High-Speed Naval Craft	

TABLE D
Control Notations

<i>NOTATION</i>	<i>DESCRIPTION</i>	<i>REFERENCE</i>
☒ ACCU	Automatic Centralized Control Unmanned – This notation is assigned to vessel having the means to control and monitor the propulsion-machinery space from the navigation bridge and from a centralized control and monitoring station installed within or adjacent to, the propulsion machinery space.	HSC 4-7-3 HSNC 4-9-3
☒ ABCU	This notation, Automatic Bridge Centralized Control Unmanned is assigned to a vessel capable of operating as ACCU classed vessel, but because of its compact size, the propulsion machinery space is not fitted with means to control the propulsion and its associated machinery from a centralized control and monitoring station installed within or adjacent to the propulsion machinery space.	HSC 4-7-4 HSNC 4-9-4
HM1	This notation and the appropriate description of “Green Seas Warning” is assigned to a vessel having hull condition monitoring systems for the purpose of motion monitoring.	HM Guide
HM2	This notation and the appropriate description of “Hull Girder Stress” will be assigned to a vessel having a stress monitoring system. The system may include local stress and fatigue monitoring system.	HM Guide
HM3	This notation and the appropriate description of “Full VDM” will be assigned to a vessel having a Voyage Data Monitoring system.	HM Guide
HSC:	Rules for Building and Classing High-Speed Craft	
HSNC:	Rules for Building and Classing High-Speed Naval Craft	
HM Guide:	Guide for Hull Condition Monitoring Systems	

7 Craft Not Built Under Survey

Craft which have not been built 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 symbols and special notations as described in 1-1-3/1 to 1-1-3/5 above, but the symbol **⊠** signifying the survey during construction will be omitted.

9 Equipment Symbol (2015)

The symbol **Ⓢ** placed after the symbols of classification, thus; **⊠ A1 Ⓢ**, will signify that the equipment of anchors and cables of the craft is in compliance with the requirements of the *HSC Rules* or *HSNC Rules*, as applicable, and any additional optional requirement that may apply, or with the requirements corresponding to the service limitation noted in the craft's classification, which have been specially approved for the limited service. This notation is mandatory for classification of self-propelled commercial craft built under ABS survey, classed and distinguished in the *Record* by the symbol **⊠ A1**.

11 **⊠** AMS Notation

Machinery which has been constructed and installed to the satisfaction of the ABS Surveyors to the full requirements of the *HSC Rules* or *HSNC Rules*, as applicable, 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 craft built under ABS survey, classed and distinguished in the *Record* by the symbol **⊠ A1**.

13 AMS Notation

Machinery which has not been constructed and installed under ABS survey, but which is submitted for classification, will be subjected to a special classification survey. Where found satisfactory and thereafter approved by the Committee, the machinery will be classed and distinguished in the *Record* by the notation **AMS**. The symbol **⊠** signifying the survey during construction will be omitted.

15 ACCU or ABCU Notations

The automatic and remote-control systems are to be in accordance with the applicable requirements of Part 4, Chapter 7 of the *HSC Rules* or Part 4, Chapter 9 of the *HSNC Rules*, as applicable.

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 craft. All controls necessary for the safe operation of the craft 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 PORT Notation

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**.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 4 Application

1 Application of Rules (1 September 2011)

1.1 General (2012)

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 or Guides regarding any other feature 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 High-Speed Craft*
- *Rules for Building and Classing High-Speed Naval Craft*

1.3 Application

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 2011 are not applicable to a craft for which the contract for construction was signed on 30 June 2011.) 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 crafts or crafts owned by Governments for non-commercial purposes.

The requirements in these Rules are the common requirements for conditions of classification of craft. Any unique requirements for a specific type of craft are specified in the supplement to these Rules in each of the Rules and Guides as listed in 1-1-4/1.1. These Rules are to be used together with the applicable supplemental Rules for the specific type of unit or structure.

1.5 Application Limits (2012)

The *HSC Rules* or *HSNC Rules* is applicable to high-speed craft or high-speed naval craft constructed of steel, aluminum, or FRP and having V/\sqrt{L} not less than 2.36 (1.30) where L is as defined in 3-1-1/3 and V is as defined in 3-2-2/1.1.3. Applicable craft type and length are as follows:

<i>Craft Type</i>	<i>Applicable Length</i>
Mono-hull	< 130 m (427 ft)
Multi-hull	< 100 m (328 ft)
Surface Effects Ship (SES)	< 90 m (295 ft)
Hydrofoil	< 60 m (197 ft)

Craft which have lengths that are in excess of the above table may be Classed using the requirements in the *HSC Rules* or *HSNC Rules*, as applicable, providing that requirements in Sections 3-2-1 and 3-2-2 of those Rules are verified by theoretical prediction, first principles analysis, and model testing.

3 Effective Date of Rule Change (*1 September 2011*)

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 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.

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

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

The date of “contract for construction” of a craft is the date on which the contract to build the craft is signed between the prospective Owner and the shipbuilder. The date and the construction numbers (i.e., hull numbers) of all the craft 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 craft type, the date of “contract for construction” of this modified craft, or multiple craft, 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 Craft and Optional Craft

The date of “contract for construction” as defined in 1-1-4/3.3.2 of a series of craft including specified optional craft 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.

Craft built under a single contract for construction are considered a “series of craft” if they are built to the same approved plans for classification purposes. However, craft 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 craft” will be considered part of the same series of craft if the option is exercised not later than one year after the contract to build the series was signed.

3.3.4 Additional Optional Craft

If a contract for construction is later amended to include additional vessels or additional options, the date of “contract for construction” for such craft 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 Direct Analyses

5.1 Required Analyses (2012)

Direct analyses are required in particular cases to demonstrate the adequacy of the structural design, as indicated in the following:

TABLE 1A
Criteria for Steel and Aluminum High-Speed Craft (2012)

<i>Craft Type</i>	<i>Length</i>	<i>Speed</i>	<i>Required Calculations to be Submitted</i>
High-Speed Craft	≥ 91 m (300 ft)	All	First Principles Loads ⁽¹⁾ Applied to a Global Finite Element Model
	61 m (200 ft) $\leq L < 91$ m (300 ft)	< 40 knots	Rules Loads ⁽²⁾ Applied to a Global Finite Element Model
	61 m (200 ft) $\leq L < 91$ m (300 ft)	> 40 knots	First Principles Loads ⁽¹⁾ Applied to a Global Finite Element Model
	< 61 m (200 ft)	> 40 knots	First Principles Slam Loads ⁽¹⁾ and Accelerations Applied to a Global Finite Element Model
Coastal Craft	≥ 91 m (300 ft)	All	First Principles Loads ⁽¹⁾ Applied to a Global Finite Element Model
	< 91 m (300 ft)	≥ 50 knots	First Principles Slam Loads ⁽¹⁾ and Accelerations Applied to a Global Finite Element Model
	< 91 m (300 ft)	< 50 knots	None
Riverine Craft	None	None	None

Notes:

- 1 Refer to Section 3-1-3 of the *HSC Rules*.
- 2 All loads and pressures as defined by Part 3, Chapter 2 of the *HSC Rules*, as applicable.

TABLE 1B
Criteria for FRP High-Speed Craft (2012)

<i>Craft Type</i>	<i>Length</i>	<i>Speed</i>	<i>Required Calculations to be Submitted</i>
All	≥ 50 m (164 ft)	All	First Principles Slam Loads ⁽¹⁾ and Accelerations Applied to a Global Finite Element Model
	All	≥ 40 knots	First Principles Slam Loads ⁽¹⁾ and Accelerations Applied to a Global Finite Element Model
	< 50 m (164 ft)	< 40 knots	None

Notes:

- 1 Refer to Section 3-1-3 of the *HSC Rules*.

TABLE 2
Criteria for High-Speed Naval Craft

<i>Craft Type</i>	<i>Length</i>	<i>Speed</i>
Naval Craft	All	All
Coastal Naval Craft	≥ 45 m (150 ft)	All
	< 45 m (150 ft)	40 knots
Riverine Naval Craft	None	None

The methods and requirements for direct analysis are in Section 3-1-3 of the *HSC Rules* or *HSNC Rules*, as applicable. See also 1-1-4/5.7.

Similarly for craft designs having the length or speed values exceeding the mentioned ones, a suitable direct analysis is to be performed to demonstrate the adequacy of the hull girder strength. (See also 3-2-1/1.1.2 and 3-2-1/3.1.)

Considerations will be given for craft which have been previously approved, or offer slight variations on the Length/Speed based requirements above. All novel concepts will be subject to special consideration, and the requirements may differ from the above.

The direct analyses are to be performed using an acceptable finite element method computer program. The extent of, and boundary conditions applied to the analytical model(s) are to be appropriate to reflect adequately the behavior of the structure. The loads to be applied to the structural model are to be based on consideration of the design values, deck cargo and similar internal loads in the hull (accounting for dynamic effects as appropriate), the external pressure loads (see Section 3-2-2 of the *HSC Rules* or *HSNC Rules*, as applicable) and distribution specified in the *HSC Rules* or *HSNC Rules*, as applicable, and appropriate wave induced hull girder bending moment and shear force effects. The requirements for this analysis are in Section 3-1-3 of the *HSC Rules* or *HSNC Rules*, as applicable.

5.3 Supplementary Analyses

In addition to the direct analyses required in 1-1-4/5.1 above, ABS may require the performance of additional direct analyses to demonstrate and document the adequacy of other features of the hull structural design, which are considered to be within the scope of classification. The need to provide such analyses can arise: in the case of trimarans, stabilized slender monohulls and other unique hull forms; where structural displacement is expected to influence (more than usually) structural response; where hull propulsion or steering system load transmission in the hull needs to be specially addressed; to demonstrate the efficiency of novel connection details on hull strength, etc.

For types of behavior or loading effects which are not within the scope of classification of the craft to be classed, ABS will upon request provide advice on what it feels constitutes an appropriate analysis. Such analyses include those for vibration and docking arrangements.

5.5 Analysis Scope and Documentation

The scope, details and manner of documenting the analyses are to be agreed with ABS before the analyses are done.

5.7 Guidance for Direct Analysis

For further elaboration on the requirements for direct analysis see the *ABS Guidance Notes on Structural Direct Analysis for High-Speed Craft*. This guidance document applies to the requirements in this section only.

7 Design by Testing (2012)

Where it is intended to employ physical testing (e.g., tank model testing, etc.) as the primary or supplementary basis of design, the requirements for the reporting and testing are in 3-1-3/5.1 of the *HSC Rules* or *HSNC Rules*, as applicable.

9 Novel Features

Craft 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 have been complied with and that special consideration has been given to the novel features based on the best information available at the time.

11 Alternatives

11.1 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. See the *ABS Guidance Notes on Structural Direct Analysis for High-Speed Craft*.

11.3 National Regulations and Naval Administration Standards (2012)

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 craft is registered or built or by the Naval Administration of the country in which the craft is registered or built, provided they are not less effective.

11.5 Other Rules

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, or a set of military or other Naval technical specifications set down by the Naval Administration, provided they are not less effective. A record comment will be entered in the *Record* indicating that classification has incorporated the provisions of this Paragraph. Submission of plans is to be in accordance with Section 1-1-6.

11.7 Order of Precedence (2012)

The order of precedence of the *HSC Rules* or *HSNC Rules* is dependent on the relative broadness of coverage of the various specification sections. For high-speed naval craft, at the topmost level, technical requirements contained within the Naval Administration documents will take precedence over any requirements contained in the *HSNC Rules*.

Within the *HSC Rules* or *HSNC Rules*, the requirements contained in Parts 1, 2 and 7 apply to all systems and equipment across the entire craft, unless otherwise specified in the more detailed sections, in which case the detailed section requirements take precedence.

Specific requirements within a lead section (for example, a section which includes the general or common requirements for a number of similar systems, such as General Requirements for Piping Systems and General Requirements for Machinery Plants) are the next broadest category of requirements; lead sections shall apply to all systems and equipment in its grouping, unless otherwise specified in more detailed system sections. These lead section requirements will take precedence over general requirements for that system only.

Specific requirements within a detailed section (for example, a section which includes the details of a particular system such as Freshwater Service Systems) are the most detailed requirements. Detailed section requirements take precedence over general requirements and lead section requirements only for the system covered in the detailed section.

The omission in one section of details covered in another section is not to be considered an inconsistency.

11.9 ABS Type Approval Program

11.9.1 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 (1-1-4/11.9.3), but is also applicable for a more expeditious procedure towards Unit-Certification as specified in 1-1-4/11.9.2.

11.9.2 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 craft, 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 *i)* and *ii)* above,
- iv)* Products found in compliance are issued “Individual Unit Certification”,
- v)* There is no requirement for subsequent reviews or surveys.

11.9.3 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-A2/5.3.4). The Confirmation of Type Approval is neither an alternative to nor an equivalent to 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.

11.9.4 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 are maintained at each ABS Technical Office.

11.9.5 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 craft, 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 craft, 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.

11.9.6 Definitions (1 September 2011)

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 is 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 of 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-A2/3 "Limitations" and 1-1-A2/5.5 "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 product. If a Surveyor's witness is required, this may not be waived under any section of the *HSC Rules* or *HSNC 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.

11.9.7 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-A2/5.1) or a Confirmation of Type Approval (1-1-A2/5.3.4), the 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-A2. The *ABS Type Approval Program* and the indicated references are available for download from the ABS website at <http://www.eagle.org>.

13 Special Consideration

Where the term “special consideration” is given in the *HSC Rules* or *HSNC Rules*, it is intended to indicate that ABS will consider the particular specified arrangement. The arrangements that require special consideration for ABS classification will be reviewed in conjunction with submitted calculations and supporting documentation in accordance with sound engineering practice.

15 Sea Trials (2012)

Attendance of the ABS Surveyors at the sea trials will be limited to verifications of systems which are required by the *HSC Rules* or *HSNC Rules*.

For high-speed naval craft, verification of the on-board mission systems is, in general, not a condition of ABS classification unless the Naval Administration specially requests to do so.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 5 Regulations

1 General (2012)

While the *HSC Rules* or *HSNC Rules* covers the requirements for the classification of new and existing craft, the attention of the Owners, the Naval Administration, 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.

Naval craft are not required to meet most International Conventions and Codes (e.g., as stated in SOLAS Ch A, Part 1, Reg. 3, or MARPOL 73/78 Article 3, para. 3). However, ABS directs the attention of the Naval Administration to the desirability of following these codes, and upon request will provide certification to these Conventions and Codes as described below.

3 International Conventions or Codes (2012)

Where authorized by the Administration of a country signatory thereto and upon request of the Owners or authorized by and upon request of the Naval Administration of a classed craft or one intended to be classed, ABS will survey a new or existing craft of the applicable size for compliance with the provisions of International Conventions or 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 Code of Safety for High-Speed Craft (2000 HSC Code), 2000.
- International Convention on Tonnage Measurement of Ships, 1969.
- International Convention for the Prevention of Pollution from Ships, 1973/78, as amended.

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 International Code of Safety for High-Speed Craft, 2000 (2012)

Where authorized by the Administration of a country signatory to the SOLAS convention or by the Naval Administration, and upon request of the Owners of an existing craft or a craft under construction, ABS will review plans and survey the craft for compliance with the provisions of 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.

7 Governmental Regulations (2012)

7.1 Governmental Authorization

Where authorized by a government agency and upon request of the Owners or upon request of the Naval Administration of a classed craft or one intended to be classed, ABS will survey and certify a new or existing craft 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 the *HSC Rules* or *HSNC Rules*, unless the government specifies otherwise.

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

9 ABS Surveyor's Safety and ABS Occupational Health and Safety Management Systems (OHSMS) Manual (1 May 2012)

In addition to 1-1-1/1 and 1-1-7/3, 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 Occupational Health and Safety Management Systems (OHSMS) 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 OHSMS 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.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 6 Submission of Plans

1 General (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.

3 Hull Plans (2012)

Plans showing the scantlings, arrangements, and details of the principal parts of the hull structure of each craft 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, 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.

- Anchor handling arrangements
- Bottom construction, floors, girders, inner bottom plating, etc.
- Bow framing
- Capacity plan
- Deck plans
- Docking Plan
- Framing plan
- General Arrangement
- Hatches and hatch-closing arrangements
- Hull port (freeing ports, gangways and fueling) and framing details
- Lines and body plan
- Machinery casings, engine and main auxiliary foundations
- Master plan for modular construction
- Midship section
- Miscellaneous nontight bulkheads which are used as structural supports
- Operating manual (see 3-2-1/9 of the *HSC Rules* or *HSNC Rules*)
- 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
- Through-hull penetrations for thrusters, stabilizers, exhausts, and sea valves
- Ventilation systems on weather decks
- Watertight and deep-tank bulkheads
- Watertight doors and framing
- Weathertight doors, framing, and sill heights
- Welding Schedule and details, bonding details (FRP)
- Windows, Storm Shutters and framing details

5 Machinery Plans and Data (1 July 2013)

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

Plans and data required to be submitted to ABS for review and approval are listed in each of the Sections within Part 4 of the *HSC Rules* or *HSNC Rules*, as applicable. See 4-1-1/7 of the *HSC Rules* or 4-1-1/5 of the *HSNC Rules* for additional information pertaining to craft systems and machinery plan submittal.

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.

7 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.

9 FRP Builder Process Description

For FRP structure, the builder is to submit a process description of the construction before the construction commences. Details of the information to be submitted are given in Part 2, Chapter 6.

11 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.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 7 Conditions for Surveys After Construction

1 Damage, Failure and Repair

1.1 Examination and Repair (2012)

Damage, failure, deterioration or repair to hull, machinery or equipment, which affects or may affect classification, is to be submitted by the Owner or Naval Administration 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 (1 September 2011)

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 proposed repair and the need for 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 recommended manufacturer's 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 craft's log and submitted to the Surveyor as required by 1-1-7/1.1.

1.5 Suspension of Classification (1 September 2011)

Failure to submit a damage, failure, deterioration, or repair governed by 1-1-7/1.1 to a Surveyor for examination at first opportunity, or failure to notify ABS in advance of the repairs contemplated by 1-1-7/1.3, may result in suspension of the craft'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 1-1-1/1 through 1-1-1/7 hereof and the issuance and use of any such reports or certificates are to be governed in all respects by 1-1-1/1 through 1-1-1/7 hereof.

3 Notification and Availability for Survey (2012)

The Surveyors are to have access to classed craft at all reasonable times. For the purpose of Surveyor Monitoring, monitoring Surveyors shall also have access to classed craft 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) (for non-naval high-speed craft), Naval Administration (for high-speed naval craft), 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 craft can be examined in dry dock or on a slipway.

The Surveyors are to undertake, with adequate notification, all surveys on classed craft 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 for 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.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 8 Fees

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

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 9 Disagreement

1 Rules or Guides

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 craft 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.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 10 Limitation of Liability (*1 September 2011*)

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.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 11 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.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 12 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.

PART

1

CHAPTER 1 Scope and Conditions of Classification

SECTION 13 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.

PART

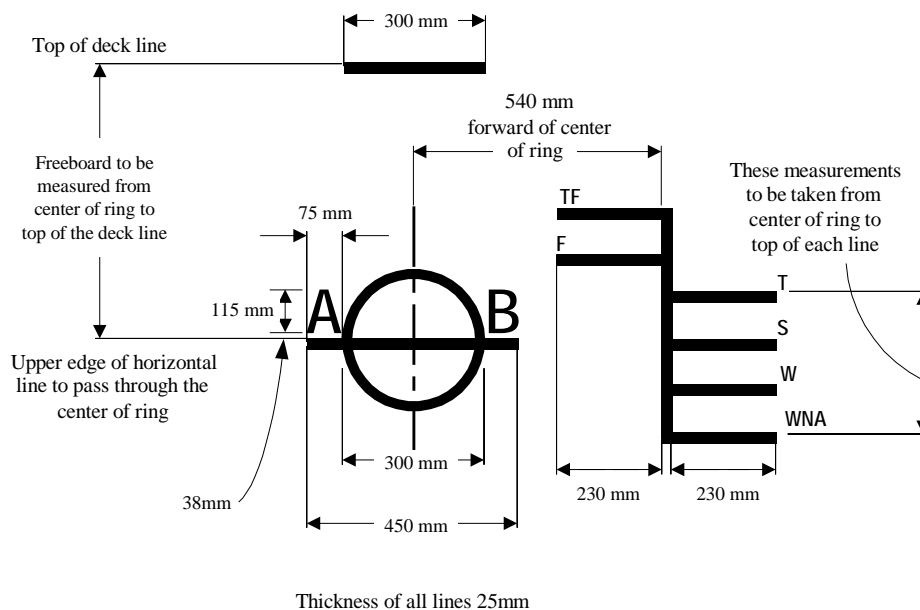
1

CHAPTER 1 Scope and Conditions of Classification

APPENDIX 1 Load Line and Tonnage Marks (2012)

1 Load Line Markings for Ocean-going Craft – Millimeters

The American Bureau of Shipping is authorized to assign Load Lines to craft 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.

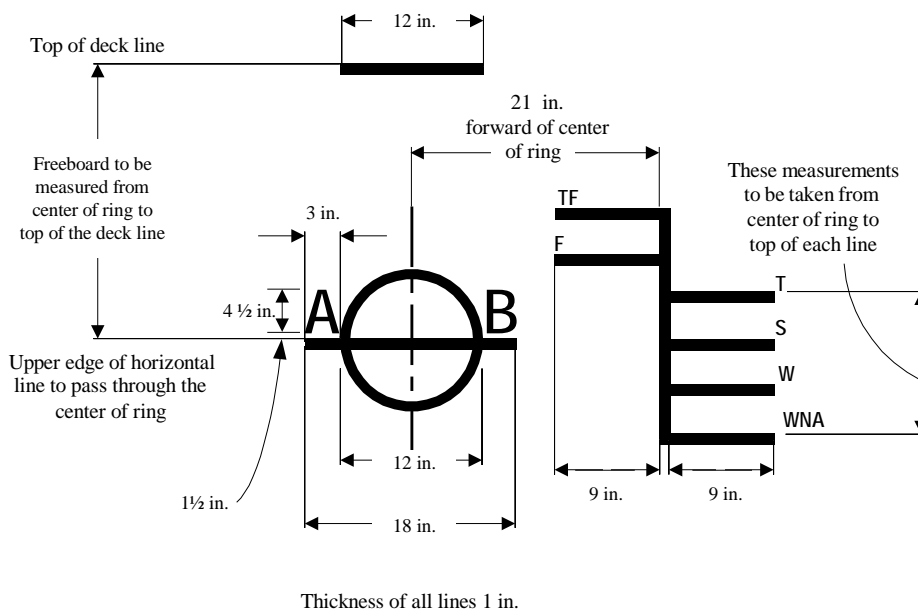


The center of the ring is to be placed on each side of the craft at the middle of the length, as defined in the Load Line Regulations. The ring and lines are to be permanently marked, as by center punch, chisel cut or bead of weld.

- 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 Craft – Inches

The American Bureau of Shipping is authorized to assign Load Lines to craft 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.

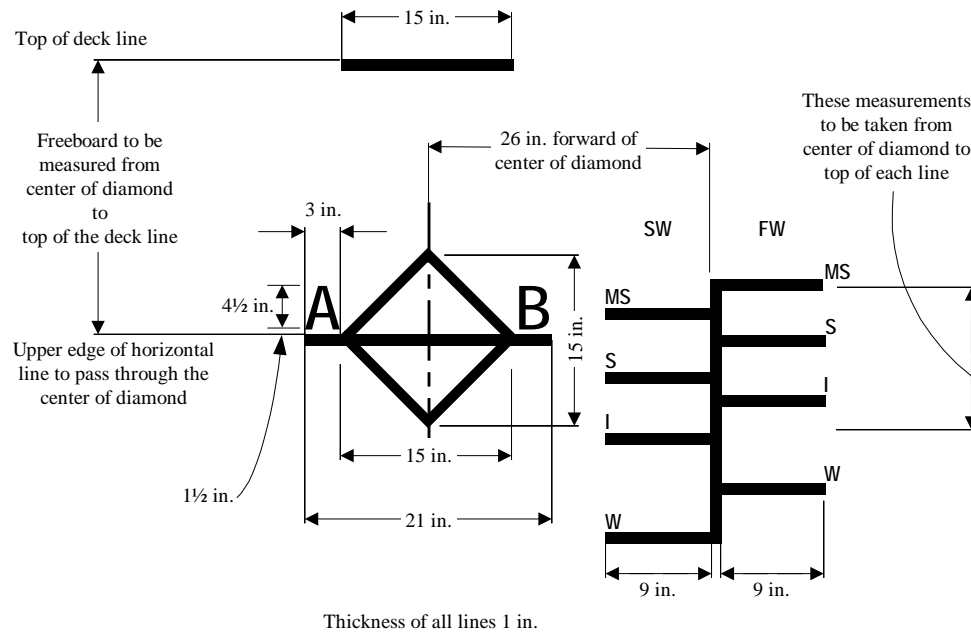


The center of the ring is to be placed on each side of the craft at the middle of the length, as defined in the Load Line Regulations. The ring and lines are to be permanently marked, as by center punch, chisel cut or bead of weld.

- 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 Craft – Inches

The American Bureau of Shipping is authorized to assign Load Lines to craft 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 craft 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.

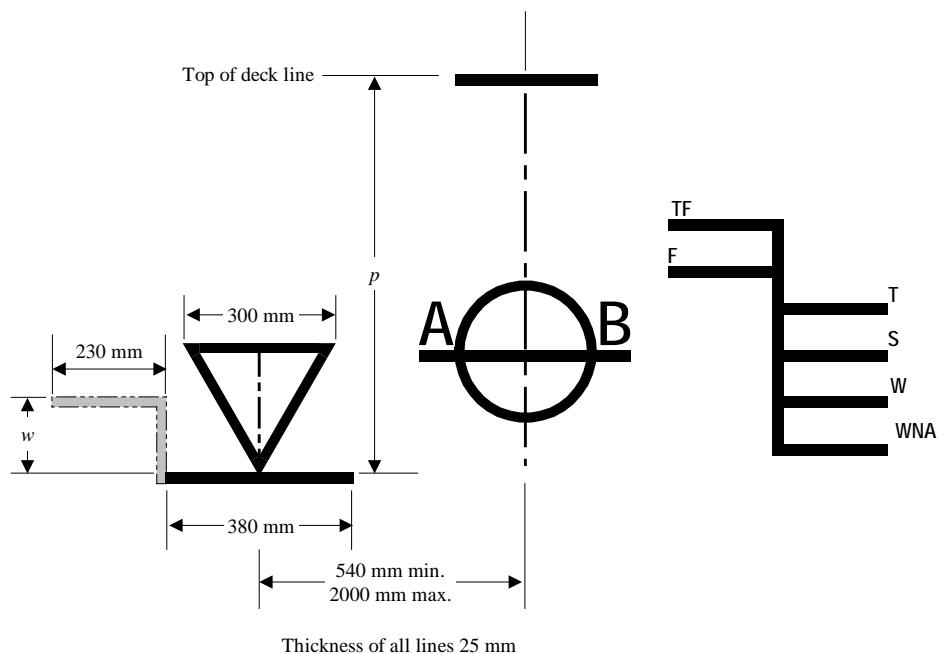
The markings are shown for the starboard side. On the port side, the markings are to be similar, forward of diamond.

- 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 craft intending to load in salt water of the St. Lawrence River.

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

The American Bureau of Shipping is authorized to assign a Tonnage Mark to craft 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.



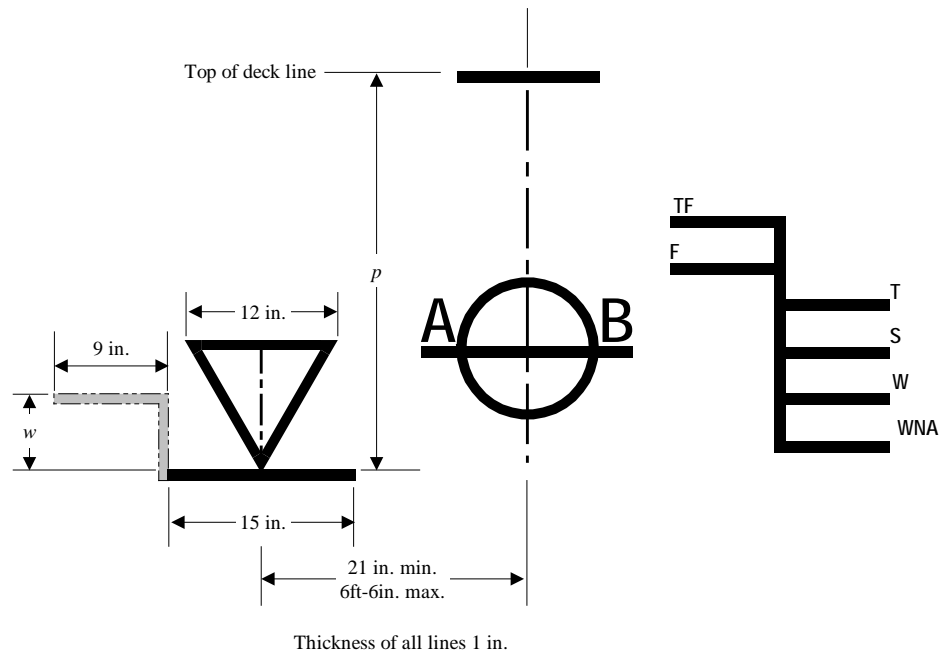
w = Allowance for Fresh Water and Tropical Waters ($1/48$ of the Molded Draft to the Tonnage Mark)

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 craft 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 Craft Operating with Dual Tonnage – Inches

The American Bureau of Shipping is authorized to assign a Tonnage Mark to craft 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.

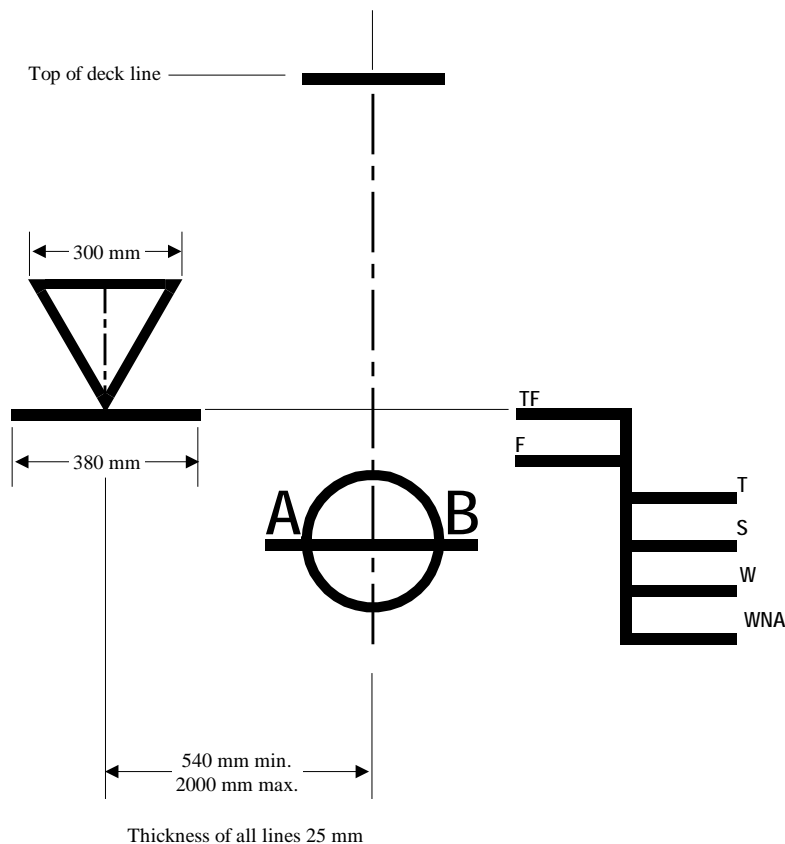


- w = Allowance for Fresh Water and Tropical Waters ($1/48$ of the Molded Draft to the Tonnage Mark)
- p = Distance from Deck Line to Tonnage Mark

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 craft 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 Craft Operating with Single Low Tonnage – Millimeters

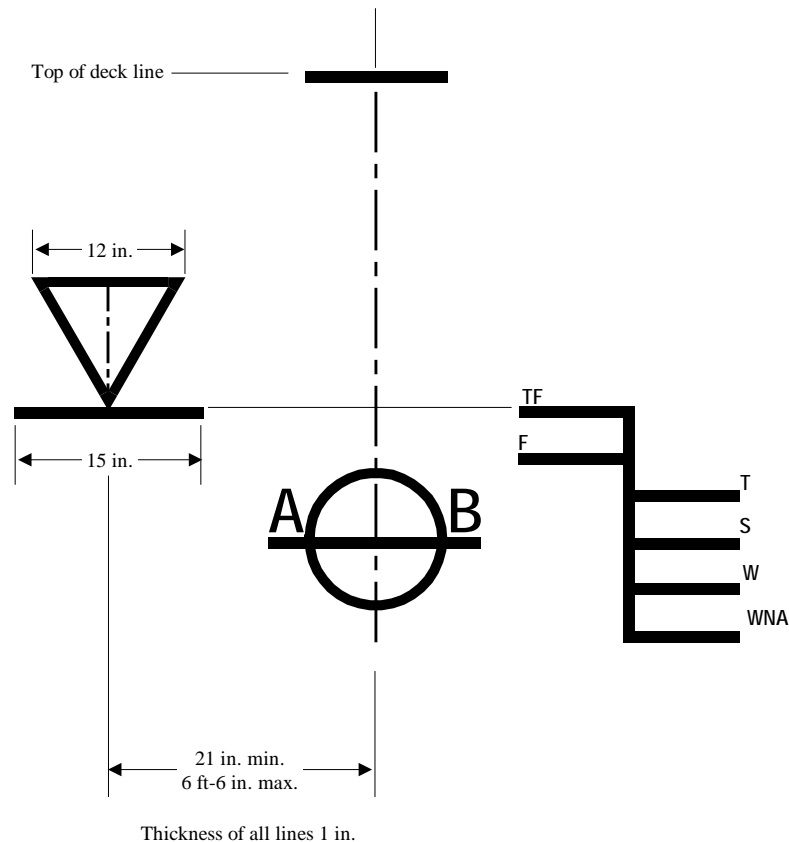
The American Bureau of Shipping is authorized to assign a Tonnage Mark to craft registered in the United States and other countries. Requests for the assignment of a Tonnage Mark are to be made in writing to any of the offices of ABS.



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 placed 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 Craft Operating with Single Low Tonnage – Inches

The American Bureau of Shipping is authorized to assign a Tonnage Mark to craft 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.



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 placed 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 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 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 *HSC Rules* or *HSNC 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 *HSC Rules* or *HSNC Rules*, as applicable, 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, to satisfy the requirements of the *HSC Rules* or *HSNC Rules*, as applicable.

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 threefold:

- 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-A2/5.3 and 1-1-A2/5.5) 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 *HSC Rules* or *HSNC Rules*, as applicable. For reference purposes, Tables 1 through 6 in Section 4-1-1, Table 1 in Section 4-2-1 and Tables 1 through 3 in Section 4-4-1 of the *HSNC 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 *HSC Rules* or *HSNC 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

The process of the Type Approval Program is shown schematically in 1-1-A2/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 *HSC Rules* or *HSNC Rules* or an alternative standard as may be permitted by the *HSC Rules* or *HSNC Rules*. Products for which there are no specific standards in the *HSC Rules* or *HSNC 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-A2/1. 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 craft, 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-A2/5.1.5.

5.1.2 Survey and/or Testing of Prototype or Production Units

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 *HSC Rules* or *HSNC 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 or in the manufacturer's facility that is certified to ISO 9001 or 1-1-A2/5.3.1(b) of these Rules, that is acceptable to ABS, consideration will be given to acceptance of test results obtained without a Surveyor present. Each ABS Technical Office will maintain a list of recognized testing facilities.

5.1.3 Product Design Assessment Certificate

Products evaluated in accordance with 1-1-A2/5.1.1 and 1-1-A2/5.1.2 and found to be in conformance with the applicable provisions of the *HSC Rules* or *HSNC 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-A2/5.3 or 1-1-A2/5.5.

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, MODUs, or facilities 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)

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-A2/5.3.1(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 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 *HSC Rules* or *HSNC 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-A2/5.3.1 and 1-1-A2/5.3.2 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 *HSC Rules* or *HSNC Rules*, or of the applicable product standard, or the manufacturer’s specifications,

will be issued with 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

Those products with both a valid Design Assessment Certificate (1-1-A2/5.1.3) and a valid Manufacturing Assessment Certificate (1-1-A2/5.3.3) are eligible for a Confirmation of Type Approval. This certificate may only be printed from the ABS website when all parts of the Type Approval Program remain current. (See also 1-1-A2/5.7.3) 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 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-A2/5.7 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 Type Approval as described in 1-1-A2/5.3 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 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 *HSC Rules* or *HSNC Rules* 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 renewal audit will be specially considered. See 1-1-A2/5.7.4. 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

5.7.1 Unit-Certification (2014)

When a Type Approved Product is proposed for use on board a craft or a marine structure, it is to comply with all applicable requirements in the *HSC Rules* or *HSNC Rules*, including 1-1-A2/5.7.3 hereunder. Where required by the ABS Rules, Unit Certification may also be completed as follows:

5.7.1(a) Products Covered by Product Quality Assurance (1-1-A2/5.5) Tier 4. Products requiring unit-certification for use on a craft, 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-A2/5.3) Requiring Unit Certification Tier 5. Where the *HSC Rules* or *HSNC Rules* requires attendance of 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 *HSC Rules* or *HSNC 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-A2/5.1.3, 1-1-A2/5.3.3 and 1-1-A2/5.5 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-A2/5.7.4. 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-A2/5.7.2(b) or 1-1-A2/5.7.2(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-A2/5.7.2(b)] or a retroactive application of the Rule change is required [see 1-1-A2/5.7.2(c)], a type approved product may be accepted for use on a craft, 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 craft, 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 craft, 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-A2/5.1, 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-A2/5.3.3 or 1-1-A2/5.5; and
- iii) Verify by survey that a valid quality assurance system has been maintained in accordance with 1-1-A2/5.3 or 1-1-A2/5.5.

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-A2/5.9) 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 (2014)

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.

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-A2/5.9.9 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-A2/5.9.2 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)

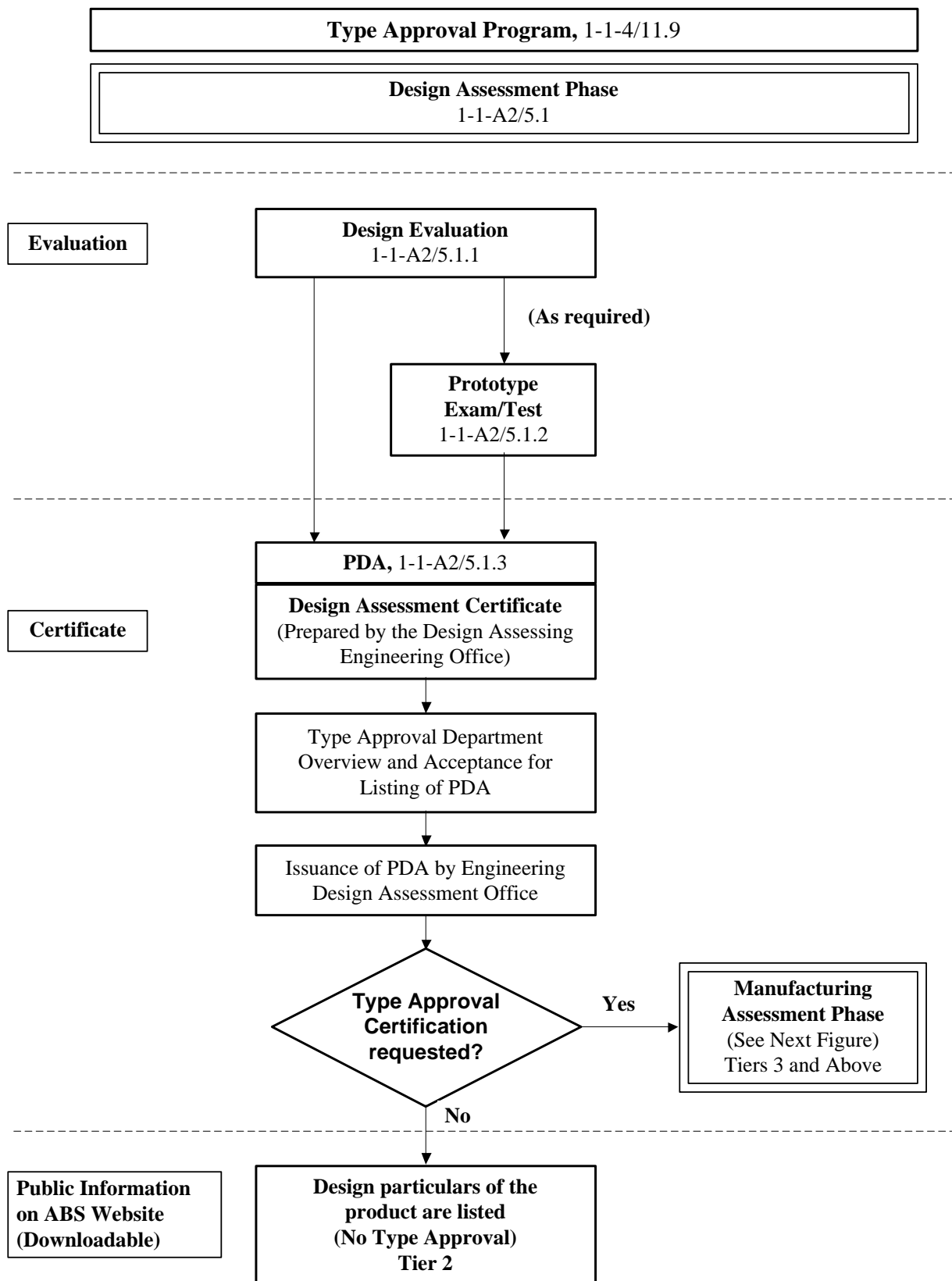
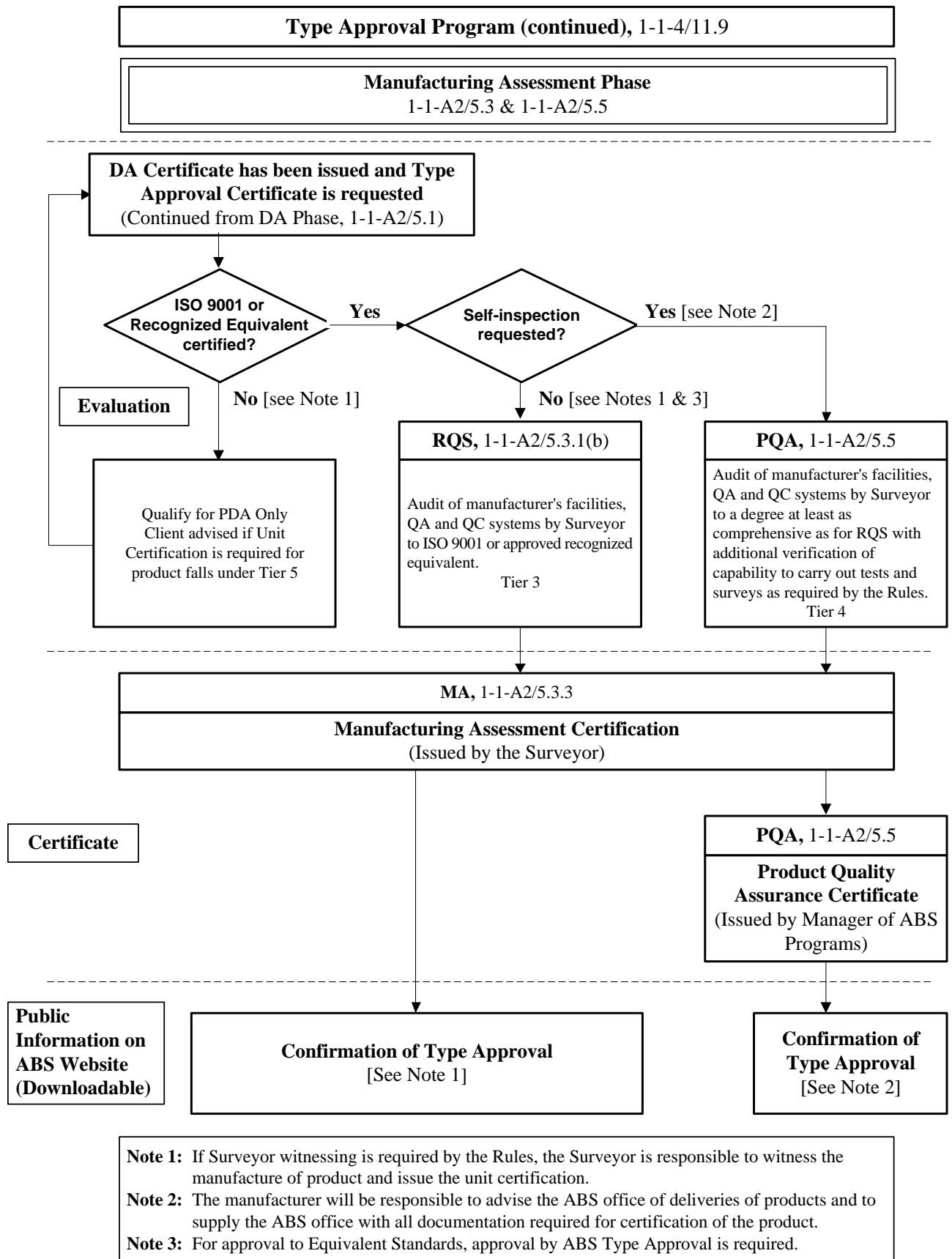


FIGURE 1 (continued)
Process of the Type Approval Program (2014)



PART

1

CHAPTER 1 Scope and Conditions of Classification

APPENDIX 3 Tiers of Approval (2014)

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, Table 1 in Section 4-2-1 and Tables 1 through 3 in Section 4-4-1 of the *HSNC 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 On-site Surveyor Involvement
- No ABS Certificate Issued

Tier 2 – Product Design Assessment (PDA)

- Plan Review to Manufacturer’s Standard and/or ABS Rules
- No On-Site Surveyor Involvement
- ABS PDA Certificate Issued

Tier 3 – Type Approval (TA) (see the note)

- 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 on site Surveyor involvement during manufacture

Note: 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
- Plan Review to ABS Rules
 - May include evaluation against recognized standard
 - PDA Certificate issued
- ABS Manufacturing Assessment
 - ISO 9001 Certification, or recognized equivalent, is mandatory
 - ABS Approved Manufacturing Procedure
 - Initial and Semi-Annual Audits by Surveyor
 - Manufacturing Assessment Certificate Issued
 - Confirmation of Type Approval Certificate Issued
- Manufacturer provides necessary documents and issues declaration of conformity
 - Batch Inspection as necessary
- Individual Certificate and/or vendor report issued

Tier 5 – Unit Certification via Survey During Fabrication (UC)

- Product Design Assessment
 - Plan Review to ABS Rules
 - May also include evaluation against recognized standard
 - PDA Certificate issued or a design approval letter issued for applications limited to a specific vessel/unit
- ABS Approved Manufacturing Procedure
 - Surveyor Attendance During Fabrication
 - Witness Inspections/Material Testing Per Requirements
 - Individual Certificate and/or vendor report Issued