

Australian Transport Council

National Standard
for
the Administration of Marine Safety

SECTION 4
SURVEYS OF VESSELS

Edition 1

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FOREWORD

This Standard has been developed by the NMSC Secretariat in consultation with a reference group consisting of representatives from the various State and Territory Marine Authorities, Classification Societies and industry.

This Standard is intended to be applied through the single national jurisdiction reform under Commonwealth legislation. It envisages a single national Authority with multiple survey organisations, that may be operated by private industry or by State or Territory Government agencies. There are three possible models specified in the Regulatory Impact Statement for National Approach to Maritime Safety Reform (NAMSR). No decision had been taken about the service delivery model at the time of publication of this standard.

In preparing this Standard, consideration was given to a number of factors including:

- a) Current vessel designs, practices and materials.
- b) Relevant national and international standards.
- c) Provisions no longer used.
- d) Current survey practice, both formal and informal.
- e) Discretionary requirements that rely on authority approval.
- f) Current technical standards format and style.

This document was released for public comments in December 2005 and the comment period closed on 7 November 2008. All the comments were assessed by the reference group and the document was modified accordingly.

The Australian Transport Council endorsed the document for publication on 06 November 2009.

Edition 1 was later subject to a correction amendment. Amendment 1 to Clause 1.6 and Table F.1 was endorsed by NMSC on 23 August 2011 and published in August 2011.

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CHAPTER 1 PRELIMINARY

1.1 SCOPE

This Standard sets out the requirements for an Authority or persons or organisations on behalf of an Authority undertaking initial and periodic surveys of vessels.

1.2 APPLICATION

This Standard applies to surveys required under applicable legislation to demonstrate compliance with applicable standards such as the National Standard for Commercial Vessels (NSCV). It does not include surveys to show compliance with other legislation and standards (such as Occupational Health and Safety).

1.3 OBJECTIVE

The objectives of this Standard are to:

- a) effectively and consistently demonstrate the achievement of the safety outcomes given in applicable legislation and applicable standards; and
- b) facilitate consistency and mutual recognition by specifying nationally agreed processes for verifying compliance with applicable legislation and applicable standards.

1.4 ASSUMPTION OF RESPONSIBILITY

Where an Authority accepts a certificate of compliance issued by a person or entity, the Authority must accept responsibility for relying on the certificate in the discharge of obligations under this Standard. Where a recognised organisation issues a certificate on behalf of the Authority, the Authority must, for the purposes of compliance with this standard, retain full responsibility for the certificate.

1.5 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

NATIONAL MARINE SAFETY COMMITTEE

National Standard for Commercial Vessels

Part B–General Requirements

Part E–Operational Practices

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

AS/NZS 3000: Electrical installations

AS/NZS 3017: Electrical installations – verification guidelines

AS/NZS ISO 9001: Quality management systems - Requirements

1.6 DEFINITIONS

anniversary date—

means the day of the month of each year in the period of survey which corresponds to the due date of the periodic survey.

NOTE: The anniversary date is determined by the Authority in accordance with applicable legislation.

applicable legislation—

that part of the legislation that expressly deals with the issue of a certificate of survey.

applicable standard—

a standard that is either expressly called up in applicable legislation, or a standard pertaining to an equivalent solution under applicable legislation.

authority—

the statutory marine authority of the Commonwealth of Australia or of a State or Territory within the Commonwealth.

builder—

the person or entity responsible for the overall construction of a new vessel to specification. The builder includes the manufacturer of a production vessel.

classification Society—

an association for the survey of vessels that has been approved as a Survey Authority by AMSA under the Commonwealth Navigation Act.

Note: At the time of publication has approved the following Classification Societies to act as survey authorities under the Commonwealth Navigation Act.

American Bureau of Shipping

Bureau Veritas

China Classification Society

Det Norske Veritas

Germanischer Lloyd

Lloyd's Register of Shipping

Nippon Kaiji Kyokai

compass adjuster—

an adjuster of compasses licensed under the applicable legislation of a jurisdiction or a person appointed by the Authority for the purpose of adjusting compasses.

competent person—

A person who has acquired the knowledge and skills by way of qualifications, experience or a combination of these, enabling that person to perform tasks required by this Standard or NSCV.

EXAMPLE:

A competent person may include a compass adjuster, radio surveyor, licensed electrician or other authorised personnel.

enforcement directive—

a temporary directive issued by an Authority for a serious non-compliance.

examine—

a process that commences with a visual inspection, to the extent that the item is reasonably accessible, that identifies the evidence of damage, deterioration and/or modification.

NOTE: Where the visual inspection identifies evidence of potential deficiencies, the examination process may require dismantling, tests, trials or other forms of closer examination needed to confirm the deficiencies and/or clarify the extent of deficiencies or risks associated with the deficiencies.

EXAMPLE:

Visual inspection undertaken as part of the examination of the bilge of a vessel may reveal signs of corrosion in accessible areas. The examination may then also require opening up of other areas of the bilge, removal of debris and cleaning and thickness testing of structural members.

initial survey—

the process by which a commercial vessel is investigated and verified that it meets prescribed standards for the first time.

For more information, refer to Chapter 3.

NOTE: Surveys for vessel upgrades, modifications and resurveys may include an initial survey component.

periodic survey—

a recurring survey, refer to Chapter 4.

production vessel—

one of two or more identical vessels (sister vessels) for the purposes of applicable legislation and applicable standards.

radio surveyor—

a recognised organisation authorised to conduct radio survey.

recognised organisation—

an organisation authorised by an Authority to undertake marine surveys in accordance with the relevant legislation.

EXAMPLE:

A recognised organisation may include a Classification Society, authorised service station, another Authority that is not the issuing Authority or an Administration not being an Authority as defined in this Standard.

NOTE: See also Chapter 2.

renewal survey—

a periodic survey undertaken at the end of a survey cycle to confirm that the safety systems and safety characteristics of a vessel at that point in time comply with the applicable Standards.

survey—

those activities, including examination, tests, trials and verifications of a vessel, its components and equipment conducted by a competent person or persons to confirm compliance with applicable standards and legislation.

survey Level 1 vessel

a vessel that requires an initial survey with follow up survey on a periodic basis. For more information, see Table F.1 of Annex F.

survey Level 2 vessel

a vessel that requires an initial survey with a partial periodic survey. For more information, see Table F.1 of Annex F.

survey Level 3 vessel

a vessel that requires an initial survey but no periodic survey. For more information, see Table F.1 of Annex F.

survey time window—

means the period during which annual/periodic surveys are to be carried out.

NOTE: The survey time window is determined by applicable legislation.

surveyor—

a person appointed by an Authority or appointed by a recognised organisation capable by reason of special qualifications, knowledge and experience to perform survey functions.

NOTE: See also Chapter 2.

test—

The physical gauging of properties with the objective of ascertaining continued readiness to function, condition or conformance with standards.

EXAMPLES:

Hammer tests
Ultrasonic thickness measurements
Oil analysis
Turning of handles
Starting of machinery

trial—

A1 | a specific type of test of a system or component to ascertain functional performance and/or compliance with applicable standards.

EXAMPLES:

Machinery trials
Emergency generator trials
Steering trials
Fire hydrant appliance trials
Anchoring trials
Evacuation trials.

verify—

to ensure that an item exists and is as per the plan, meets an applicable standard or has been declared as meeting an applicable standard by a recognised organisation or an Authority.

EXAMPLES:

- Quantities of lifesaving equipment
- Sighting of electrical testing documentation
- Sighting of classification documents.

REQUIRED OUTCOMES**1.7 SAFETY LEVELS**

When undertaking a survey, the survey organisation must ensure that a vessel achieves a level of safety equivalent to the required outcomes of the relevant Sections of the NSCV or other nominated standards.

1.8 COMPLETENESS AND EFFECTIVENESS OF INSPECTION

An Authority or a recognised organisation that issues certificates of survey under applicable legislation must, for the purposes of compliance with this standard, be satisfied regarding the completeness and effectiveness of the inspection and survey in respect of the matters specified within the applicable legislation and applicable standards.

1.9 FLEXIBILITY OF SOLUTION

The survey process must have the flexibility to accept safety solutions that are equivalent to the deemed-to-satisfy solution that might be specified within a standard, subject to any limits that might be set by applicable legislation.

1.10 TRANSPARENCY AND CREDIBILITY

The survey process must be reviewable and auditable by the Authority and other parties to facilitate confidence that the required outcomes are being achieved.

1.11 RETENTION AND TRANSFER OF INFORMATION ESSENTIAL TO SAFETY

The survey process must ensure that information essential to safety that arises during the survey is recorded for future reference, and is transferred to others responsible for the safety of the vessel that might need to rely on and act upon that information.

NOTE: Authorities should have in place processes that retain essential information for the period that a vessel remains in survey in that jurisdiction or in other Australian jurisdictions, and for a period not less than five years after commercial operation has terminated.

EQUIVALENT SOLUTIONS**1.12 EQUIVALENT SOLUTIONS FOR THE SURVEY PROCESSES APPLICABLE TO VESSELS**

Where an Authority through applicable legislation or administrative action adopts a survey process applicable to all or specific classes of vessels within its jurisdiction that differs from that specified as deemed-to-satisfy within this Standard, the Authority shall ensure that the required outcomes specified in this Standard are achieved to an extent no less than that

specified by the relevant deemed-to-satisfy solutions that follow. The Authority shall:

- a) document the process that is applied;
- b) monitor the safety outcomes of the process; and
- c) ensure that the process and its outcomes are auditable.

NOTE: Accreditation of the jurisdiction under a quality management system would facilitate items a) to c).

1.13 EQUIVALENT SOLUTIONS FOR THE SURVEY OF AN INDIVIDUAL VESSEL

Proposals for an equivalent solution applicable to an individual vessel as an alternative to the deemed-to-satisfy solutions specified in this standard shall comply with the requirements for equivalent solutions specified under Chapter 2 of Part B of the NSCV. Equivalent solutions shall be assessed on the basis of objective and, where appropriate, quantifiable criteria, taking into account the risks associated with an error in the assessment of the equivalent solution including the following factors:

- a) less than complete knowledge of the hazards and risks associated with the vessel;
- b) the reliability of the equivalent survey solution; and
- c) the possibility of unfavourable interactions with other hazards and safety systems on the vessel.

DEEMED-TO-SATISFY SOLUTIONS

1.14 COMPLIANCE

For the purpose of this National Standard, the survey of vessels shall be deemed-to-satisfy the Required Outcomes in Clauses 1.7 to 1.10 to the extent specified by this Standard if they comply with Chapter 2 to Chapter 4.

CHAPTER 2 CONTROL OF SURVEY PROCESS

2.1 COMPETENCE

Personnel that approve, examine, test, trial, verify or carry out some other function in the survey of a vessel, its fittings or equipment shall have the appropriate training, knowledge, experience and, where appropriate, qualification to competently undertake the particular survey activity.

NOTE: An Authority that does not have the expertise to undertake a function would normally rely on a recognised organisation for the purposes of performing the function, see Clause 2.3.

2.2 MANAGEMENT

The Authority shall have means and processes to control and manage the work undertaken by surveyors to ensure that the survey is carried out in accordance with applicable legislation and applicable standards.

2.3 DELEGATIONS

Subject to Clauses 2.1 and 2.2 and the provisions of applicable legislation, an Authority may delegate the survey function or activities that are part of the survey function to recognised organisations to conduct surveys on its behalf. Where such delegations are made, the surveys by the recognised organisation shall be made as agents or sub-contractors of the Authority for the purposes of verifying compliance.

2.4 RELIANCE ON OTHERS

Where the results of examinations, trials, or tests from other sources are to be relied upon, the Authority or recognised organisation shall—

- a) make such enquiries as required to ensure that the results are reliable; and
- b) ensure that the results expressly verify compliance with the required standards.

NOTE: The quality of inputs to the survey system can have a significant impact on the quality of outputs from the survey system.

2.5 UNSAFE VESSELS

Where a surveyor during the course of an initial or periodic survey notes details of the vessel's arrangement, construction, machinery or equipment that are unsafe but which are not the subject of a specific deemed-to-satisfy provision under the applicable legislation and applicable standards for the issue of a Certificate of Survey, the surveyor shall invoke one or more of the following actions:

- a) Advise the owner in writing of the problem,
- b) Refer the matter to the relevant Commonwealth, State or Territory government agency that administers legislation pertaining to the particular risk; e.g., occupational health and safety or environmental protection, or
- c) Invoke provisions applicable to unsafe vessels under the legislation of the jurisdiction.

CHAPTER 3 INITIAL SURVEY

3.1 COMPLIANCE TO BE VERIFIED

A vessel that is required by legislation to be subjected to initial survey shall, before being issued with a certificate of survey, be subject to such checks, calculations, inspections, tests and trials as required to verify the vessel's compliance with the applicable legislation and applicable standards.

3.2 VESSEL IDENTIFICATION

The Authority shall issue a distinguishing number for each vessel where the vessel is to be issued a certificate of survey.

The distinguishing number shall comply with Annex I.

3.3 PHASES OF INITIAL SURVEY

For the purposes of this standard, the initial survey of a vessel is divided into three phases, defined as follows:

Design phase—

the verification of the processes and outcomes of activities that define the overall concept and detailed design of a vessel prior to the actual physical execution of construction for compliance with requirements specified in applicable legislation and applicable standards. The design phase may include but is not limited to the review of plans, design calculations and building specifications.

Construction phase—

the verification of the processes and outcomes of activities undertaken during the course of construction for compliance with requirements specified in applicable legislation and applicable standards. Construction phase surveys may include, but are not limited to, verification that the vessel is built in accordance with design documentation, quality of workmanship, verification of lines plan, verification of draft marks, quality of materials.

Commissioning phase—

the verification of safety outcomes for compliance with requirements specified in applicable legislation and applicable standards prior to the vessel being allowed to operate. Commissioning phase surveys may include, but are not limited to, trials and tests of the vessel (including stability) and systems essential to safety, and verifying the quantity, type and availability of safety equipment and safety information

3.4 CATEGORIES OF INITIAL SURVEY

The initial survey of a vessel shall be undertaken in accordance with one of the survey categories listed in Table 1, depending upon the size, type of operation and area of operation of the vessel.

NOTE: Table 1 provides options for initial survey that vary the nature and extent of Authority verification. The extent to which the builder is responsible for achieving required standards during each phase of survey has been determined taking into account the complexity of the vessel and the consequences of error.

Table 1 – Deemed-to-satisfy options for initial survey

Survey category	Vessels in category		Design phase	Construction phase	Commissioning phase
U	All vessels	All lengths	Authority survey (Clause 3.6)	Authority survey (Clause 3.6)	Authority survey (Clause 3.6)
V	Production vessels	All lengths	Design type approval (Clause 3.7)	Authority survey (Clause 3.6) Error! Reference source not found.	Authority survey (Clause 3.6)
W	Production Vessels Class D and E	< 24 m	Design type approval (Clause 3.7)	Quality management system—production (Clause 3.78)	Authority survey (Clause 3.76)
	Production Vessels Class 2B, 2C, 3B and 3C	≤ 13 m			
X	Production Vessels Class 1D, 1E, 2B, 2C, 3B, 3C	< 7.5 m	Design type approval (Clause 3.7)	Internal production control (Clause 3.9) with sample vessel verification by Authority or a recognised organisation (Clause 3.10)	Authority survey (Clause 3.6)
	Production Class 2E, 3E, 4E	< 16 m			
	Production Class 4C, 2D, 3D, 4D	≤ 13 m			
Y	Production Class 2D, 2E, 3D, 3E, 4D, 4E	< 7.5 m	Design type approval (Clause 3.7)	Internal production control (Clause 3.9) with reactive sample vessel verification by Authority or a recognised organisation (Clause 3.11)	Internal commissioning control (Clause 3.9) with sample vessel verification by Authority (Clause 3.10) ¹
Z	Production non-powered Class 2E, 3E, 4C, 4D, 4E	< 7.5 m	Internal design control (Clause 3.9)	Internal production control (Clause 3.9) with reactive sample vessel verification by Authority or a recognised organisation (Clause 3.11)	Internal commissioning control (Clause 3.9) with reactive sample vessel verification by Authority (Clause 3.11) ¹

¹Vessels under survey categories Y or Z that are issued with a Certificate of Survey shall undergo an Authority survey instead of internal commissioning control with sample verification.

3.5 SURVEY CERTIFICATES V TO Z AT DISCRETION OF AUTHORITY

The Authority shall make arrangements to monitor the effectiveness of the survey process for Categories V to Z. The Authority shall advise the builder of any identified non-conformities in either the survey process or the compliance of vessels, and shall establish a timetable for correction. The

Authority shall revoke approval to survey under a specific survey category should systemic non-conformities that could affect safety remain uncorrected after the due date. A builder, whose survey category has been revoked, may continue production under a higher survey category, the level being at the discretion of the Authority.

3.6 AUTHORITY SURVEY

3.6.1 Scope

Clause 3.6 specifies the requirements for a survey conducted by, or on behalf of the Authority. It includes surveys undertaken by recognised organisations as sub-contractors or agents of the Authority.

3.6.2 Application

Clause 3.6 applies to vessels under survey categories U, V, W and X, see Table 1.

3.6.3 Design phase

Sufficient documentation including plans and specifications shall be supplied to and reviewed by the Authority or a recognised organisation to enable the compliance of the vessel's design to applicable legislation and applicable standards to be verified. Copies of plans, documents and calculations shall be retained by the Authority as a record of compliance and for future reference.

NOTES:

1. Guidance on plans to be submitted is provided in Part B Annex D of the NSCV.
2. Authorities should encourage the submission of plans prior to construction. This reduces the likelihood of the applicant having to make expensive modifications to the actual vessel in order to comply with requirements.

3.6.4 Construction phase

A construction phase survey undertaken by an Authority or recognised organisation shall comprise such inspections, documentation, trials and tests needed to verify that the building environment, materials, workmanship, structures, machinery and equipment associated with the construction and fitting out of the vessel comply with applicable legislation, applicable standards, approved plans and specifications. A record of the date, person inspecting, observations and conclusions of inspections undertaken throughout the construction phase shall be retained by the Authority or the recognised organisation.

3.6.5 Commissioning phase

A commissioning phase survey undertaken by an Authority or an recognised organisation shall comprise such inspections, documentation, trials and tests needed to verify that the function of systems essential to safety (including but not limited to hull integrity, lifesaving equipment, fire safety equipment and stability) comply with applicable legislation, applicable standards and relevant assumptions or conditions of the design approval. A record of the date, person inspecting, observations and conclusions of inspections undertaken throughout the commissioning phase shall be retained by the Authority or the recognised organisation.

3.7 DESIGN TYPE APPROVAL BY AUTHORITY

3.7.1 Scope

Clause 3.7 specifies the requirements for design type approval by the Authority.

3.7.2 Application

Clause 3.7 applies to production where more than one vessel is built from the same set of design plans and specifications under survey categories V, W, X and Y, Table 1. Design type approval applies to vessels that satisfy either the deemed-to-satisfy solution or a generic equivalent solution under the NSCV.

NOTE: Design type approval cannot apply to a vessel relying on a local equivalent solution under the NSCV or an exemption under enabling legislation because of the need to assess equivalence or exemption taking into account the specific circumstances of the particular vessel. Vessels relying on a local equivalent solution or exemption may not be accepted in other jurisdictions.

3.7.3 Objective

The objective of design type approval is to enable a series of identical or very similar vessels to be manufactured without the Authority having to repeat the design phase of the survey process for each vessel, while still maintaining the required outcomes of this Standard.

3.7.4 Authority to specify framework for design type approval.

Where an applicant relies on design type approval as a part of the initial survey process described in Table 1, the Authority shall specify compliance by the applicant with the requirements set out in Annex A.

3.7.5 Approval of prototype.

The Authority shall ascertain and attest that a prototype vessel, representative of the production envisaged, complies with the provisions of applicable legislation and applicable standards.

The Authority shall conduct a survey identical to an Authority survey under Clause 3.6 on the prototype vessel. The survey shall include design, construction and commissioning phases.

At the satisfactory completion of the prototype vessel, the builder shall revise existing plans and specifications to reflect the prototype vessel as-built. Additional plans and specifications shall be provided if necessary to duplicate the prototype. The plans and specifications shall be sufficient in quantity and detail to enable the builder to duplicate the prototype vessel.

3.7.6 Design type certification

Upon satisfactory completion of the requirements of Clause 3.7.5, the revised plans and specifications shall be type approved and design type certification issued by the Authority to the applicant. The certificate shall contain a type approval number, the name and address of the builder, conclusions of the examination, and conditions for its validity and the necessary data for identification of the approved type. A list of the relevant parts of the technical documentation shall be annexed to the certificate and the Authority shall keep a copy of the relevant technical documentation.

3.7.7 Period of validity of design type certification

The design type certificate shall be valid for a period of five years from the date of issue, except where—

- a) subsequent modifications have been made to the design type approved design of a vessel that may affect compliance with applicable legislation and applicable standards, and a revision to the design type approval certificate has not been issued; or
- b) there have been changes to applicable legislation, transition arrangements contained in the legislation no longer apply, and the design no longer complies.

3.7.8 Review of design type approvals

The Authority shall establish arrangements to review the design type approval prior to reissuing a design type certificate for the vessel design at the expiry of the design type certificate. The review shall ensure that the design and resultant product complies with applicable legislation and applicable standards.

3.7.9 Retrospective application of standards

Unless specified otherwise in applicable legislation, standards that were in force at the time of issue of the design type certificate shall be deemed-to-satisfy the required outcomes for the period of validity of the certificate. Renewal of design type certificates shall be conditional on the design meeting current applicable standards and applicable legislation.

3.7.10 Communication

Each Authority shall communicate to the other Authorities the relevant information concerning design type certification and revisions issued and withdrawn.

NOTE: Details of design type approvals issued by State and Territory Authorities with conditions and limits are listed under the National Register of Compliant Equipment.

3.7.11 Documentation

The Authority shall make arrangements that documentation verifying the compliance of the prototype with applicable legislation and applicable standards is retained and made available to another Authority should a vessel of the type be submitted for initial survey to the other Authority, or for subsequent verification or investigation. The Authority issuing the design type certificate shall also ensure that a register of vessels completed under the design type certification is maintained.

3.7.12 Audit

The Authority shall monitor the compliance of product with the design type approval, either while conducting surveys in the construction or commissioning phases or by random sampling or audit at periods not exceeding three years, as applicable. Where the Authority identifies non-conformances in vessels being constructed under a design type approval, the Authority shall have in place arrangements that require the designer or builder to promptly remedy the non-conformances. Where non-conformances are not corrected, the Authority shall revoke the design type certification.

3.8 QUALITY MANAGEMENT SYSTEM—PRODUCTION

3.8.1 Scope

Clause 3.8 specifies the requirements on an Authority for the application of quality management system—production.

3.8.2 Application

Clause 3.8 applies to production where more than one vessel is built from the same set of design plans and specifications under survey category W as specified in Table 1.

3.8.3 Objective

The objective of quality management system—production is to enable a series of identical or very similar vessels to be manufactured without the Authority having to repeat the construction phase of the survey process for each vessel, while still maintaining the required outcomes of this Standard.

3.8.4 Authority to specify framework for quality management

Where an applicant relies on a quality management system as a part of the initial survey process described in Table 1, the Authority shall specify compliance by the applicant with the requirements set out in Annex B.

3.8.5 Audit

The Authority or a JASANZ accredited certification body shall—

- a) conduct a second party audit on the builder's quality management system prior to approval and at intervals not exceeding three years; or
- b) be satisfied that a third party audit combined with product verification meets the requirements of AS/NZS ISO 9001.

The purpose of audit is to make sure that the builder duly fulfils the obligations arising out of the approved quality system. In conducting an audit, the Authority shall review—

- i) the quality system documentation; and
- ii) the quality records pertaining to the quality system that may include, but are not limited to, inspection reports and test data, calibration data, qualification reports of the personnel concerned and other relevant records.

3.8.6 Unscheduled visits

The Authority shall make unscheduled visits to the builder should incidents or other evidence indicate potential non-conformances in the vessels being manufactured under the system.

At the time of such visits, the Authority shall carry out tests or have them carried out in order to check the proper functioning of the quality system where necessary. The Authority shall provide the builder with a visit report and, if a test has been carried out, with a test report.

3.8.7 Documentation

The Authority shall make arrangements that documentation verifying the proper functioning of the quality system is retained for future reference.

3.9 INTERNAL CONTROL–DESIGN, PRODUCTION AND/OR COMMISSIONING

3.9.1 Scope

Clause 3.9 specifies the requirements for internal control as an alternative to surveys undertaken by the Authority.

3.9.2 Application

Clause 3.9 applies to production where more than one vessel is built from the same set of design plans and specifications under survey categories X (construction), Y (construction and commissioning) and Z (design, construction and commissioning) as specified in Table 1.

3.9.3 Objective

The objective of internal control—design, construction and/or commissioning is to enable a series of identical or very similar vessels to be manufactured without the Authority having to repeat the design/construction and/or commissioning phases of the survey process for each vessel, while still maintaining the required outcomes of this Standard.

3.9.4 Vessels with a Certificate of Survey

An Authority that issues a Certificate of Survey for a vessel under survey categories Y or Z shall undertake the commissioning survey.

3.9.5 Authority to establish framework for internal control

Where an applicant relies on internal control as a part of the initial survey process described in Table 1, the Authority shall specify compliance by the applicant with the requirements set out in Annex C.

3.9.6 Declarations and documentation

The Authority shall make arrangements to ensure that declarations and documentation verifying that the internal control is functioning, is retained as required by the relevant legislation.

3.10 SAMPLE VESSEL VERIFICATION BY THE AUTHORITY

3.10.1 Scope

Clause 3.10 specifies the requirements for sample vessel verification by the Authority.

3.10.2 Application

Clause 3.10 applies to production where more than one vessel is built from the same set of design plans and specifications under survey categories X (construction) and Y (commissioning) as specified in Table 1.

3.10.3 Objective

The objective of sample vessel verification is to provide a level of construction and/or commissioning verification that facilitates mass production while still maintaining an effective level of proactive Authority monitoring and verification to achieve the required outcomes of this Standard.

3.10.4 Authority to establish framework for internal control

Where an applicant relies on internal control as a part of the initial survey process, the Authority shall, where specified in Table 1, undertake sample inspections that comply with the requirements set out in Annex D.

3.10.5 Sampling frequency

The Authority shall make arrangements to ensure that appropriate examinations, tests and trials on vessels in the production series are made at regular and, where appropriate, random intervals in order to check the conformity of the vessel with the applicable legislation and applicable standards over the entire period of production.

NOTE: Typically, one in each five vessels of the production that is required to comply with applicable legislation and applicable standards should be audited.

3.10.6 Sampling extent of survey

The sampled product shall be subject to a survey to confirm that it complies with the matters listed under a construction phase or commissioning phase survey, as appropriate, including compliance of the product with approved plans and specifications and conditions of design type approval certification.

3.10.7 Documentation

The Authority shall maintain a record of vessels surveyed, the findings of those surveys and a record of declarations made by the builder for vessels not surveyed.

3.11 REACTIVE VERIFICATION BY AUTHORITY

3.11.1 Scope

Clause 3.11 specifies the requirements for reactive sample vessel verification by an Authority.

3.11.2 Application

Clause 3.11 applies to production where more than one vessel is built from the same set of design plans and specifications under survey categories Y (production) and Z (production and commissioning) as specified in Table 1.

3.11.3 Objective

The objective of reactive verification is to permit processes that facilitate mass production while still ensuring that an appropriate level of control is maintained to correct non-conformances should they be identified.

3.11.4 Reactive application

The Authority shall verify that one or more sample vessels comply with applicable legislation and applicable standards should reports, incidents or other evidence indicate potential non-conformances in the vessels being manufactured. One or several vessels representing the production of the builder shall be tested in accordance with Clause 3.6.5, and if required, Clause 3.6.4.

CHAPTER 4 PERIODIC SURVEY

4.1 COMPLIANCE TO BE VERIFIED

A vessel that is required by legislation to be subjected to periodic survey shall, before being re-issued with a certificate of compliance, be subject to such examinations, verifications, tests and trials to verify, within the scope and depth of the inspections, the vessel's continued compliance with the applicable legislation and applicable standards, subject to any program for the rectification of deficiencies.

For details about the vessels that require a full periodic survey or partial periodic survey, see Annex F.

4.2 DEEMED-TO-SATISFY SURVEYS

4.2.1 Scope of Survey

The deemed-to-satisfy periodic survey shall comprise such examinations, verifications, tests and trials of the items specified in Annex E for the relevant year in the survey cycle.

NOTE: Refer to Clause 4.6 for variations from the specified periodic survey schedule including equivalent solutions

4.2.2 Depth of survey

The deemed-to-satisfy depth of survey for a particular periodic survey category for a particular year of the survey cycle shall be as specified in Annex E.

4.2.3 Frequency of survey

The deemed-to-satisfy frequency of periodic survey inspections shall be in accordance with the schedule of survey inspections listed in Annex E.

NOTE: The actual date of survey may be modified from the anniversary date by the survey time window permitted by applicable legislation.

4.2.4 Functions of the survey

To the extent practicable given the scope and depth of a particular inspection provided for in Annex E, the survey shall:

- a) confirm that the vessel and its equipment continue to comply with the requirements of the enabling legislation and standards specified by that legislation;
- b) identify deterioration, wear or damage to the vessel that may interfere with the ability of the vessel and its equipment to comply with item a) above.

4.2.5 Tests and trials

The periodic survey shall include such tests and trials that may be required to prove compliance as specified in Annex E.

4.3 STATEMENTS BY SURVEYORS

4.3.1 Types of statements

Upon completion of the survey of a vessel, the surveyor shall make a statement on behalf of the Authority as to the status of the vessel. The statement shall be one of three types:

- a) a statement of compliance; or
- b) a conditional statement of compliance; or
- c) a statement of non-compliance.

4.3.2 Statement of compliance

For the purposes of this Standard, a statement of compliance shall declare that the vessel complies with applicable legislation and standards, to the extent evident from an inspection in accordance with Annex E or an approved equivalent survey schedule solution.

4.3.3 Conditional statement of compliance

In specifying a conditional statement of compliance, the surveyor declaring the vessel shall:

- a) take into account the risks associated with the vessel's operation until the due date for action;
- b) ensure that owner/operator has provided reasonable grounds that the program of rectification of deficiencies will be completed no later than the due date; and
- c) specify a method of verification, commensurate with the risks that would arise from non-compliance.

NOTE: A conditional statement of compliance may, for example, include a program of actions to correct deficiencies or may set limitations on the vessel's use.

4.3.4 Statement of non-compliance

A surveyor that makes a statement of non-compliance shall list the deficiencies that give rise to the non-compliance and shall invoke the relevant provisions of the applicable legislation appropriate to the risks that would arise should the vessel continue to operate.

4.4 DOCUMENTATION OF PERIODIC SURVEY

4.4.1 By surveyor

On completion of a periodic survey inspection, the surveyor shall prepare the following:

- a) a duplicate list of non-conformances with the required repairs and actions to correct those non-conformances, one for the owner, one for the Authority;
- b) a survey report and declaration in the prescribed form.

4.4.2 By Authority

The Authority shall document the following:

- a) the results of periodic inspections including the declaration by the surveyor;

- b) tests and trials;
- c) any program for the rectification of deficiencies;
- d) any operational requirements or restrictions; and
- e) the verification that any deficiencies under item c) have been rectified.

The Authority shall retain a copy of documentation pertaining to periodic survey for future reference. Information relevant to the safety of the vessel that arose during the course of the survey process shall be made available to those persons who have responsibility for the safety of the vessel.

4.5 COMMUNICATION WITH VESSEL OWNER

The Authority shall establish and maintain arrangements to inform vessel owners about future survey inspections and for the vessel owner to inform the Authority when any part of a vessel's hull, structure, machinery, fittings or equipment is open for routine maintenance or substantial repair in order that a survey may be conducted, if required.

4.6 VARIATIONS FROM THE SPECIFIED PERIODIC SURVEY SCHEDULES FOR A PARTICULAR VESSEL OR GROUP OF VESSELS

4.6.1 Vessels in class

As an equivalent solution to the survey schedule specified in Clause E2, the periodic survey schedule that is assigned to the vessel in accordance with the rules of the Classification Society may be substituted for a vessel that is in Class. This clause applies to hull, machinery, electrical surveys and to other aspects of survey that may be expressly delegated by the Authority to the Classification Society. Annex G provides a risk-based approach to vary periodic survey.

4.6.2 Additional scope, depth and frequency of inspections

Nothing in Annex E shall prevent an Authority from requiring, upon reasonable grounds, that the scope, depth or frequency of survey for a vessel or a group of vessels be changed from that specified in the applicable survey cycle.

An Authority shall increase the scope, depth or frequency of periodic surveys for a vessel where:

- a) The increased survey schedule is expressly stated or implied as a condition of approval for one or more equivalent solutions during initial survey on a vessel or a group of vessels under Part B of the NSCV.
- b) The increased survey schedule provides a viable equivalent solution for safety to enable a conditional declaration of compliance be issued to a vessel that would otherwise be given a declaration of non-compliance.
- c) The extent and nature of non-conformities or other indications of problems exposed during an inspection warrants expanded investigation in areas not inspected or tested or closer investigation in those areas that have been inspected or tested.

4.6.3 Equivalent solutions for reduced periodic survey inspections

4.6.3.1 Safety not to be reduced

The scope, depth and/or frequency of periodic inspections given in Annex E may be reduced as an equivalent solution applicable to a vessel provided safety is not reduced.

4.6.3.2 Risk factors

As part of the assessment specified in Clause 1.13, risk factors that shall be taken into account when considering equivalent solutions that alter the scope, depth or frequency of periodic survey include:

- a) increases in the likelihood and/or consequences of hazards (age of the vessel, physical attributes of the vessel, area of operation, nature of operation);
- b) the incident history of a particular class of vessels; and
- c) operational and maintenance performance of the operator.

NOTE: Annex G provides a risk-based approach to vary periodic inspections.

4.6.3.3 Nature of modification

The equivalent solution may reduce the scope, depth and/or frequency of inspection listed in Annex E. However, the scope of items surveyed over the entire survey cycle should not be reduced unless the item to be omitted is, under the particular circumstances, not relevant to the safety of the vessel.

4.6.3.4 Limitations on equivalent solutions for periodic survey

The Authority shall review the equivalent solution should the risk factors specified in Clause 4.6.3.2 change.

EXAMPLES:

The equivalent solution should be reviewed if the vessel is:

- a) sold,
- b) used for a different service,
- c) modified, or
- d) involved in an incident.

4.6.3.5 Compliance monitoring

The Authority shall establish processes to verify that the outcomes of the equivalent periodic survey schedule over time do not reduce safety levels below that specified in applicable legislation and standards.

4.6.4 Process for administering variations in periodic survey schedules

An Authority shall have in place a process for administering variations in periodic survey schedules that provides an objective and auditable means for decision making.

ANNEX A DESIGN TYPE APPROVAL BY AUTHORITY

A1 SCOPE

This Annex describes the procedure for design type approval of a vessel design whereby the design phase of the initial survey process undertaken for a prototype or specimen vessel is deemed-to-satisfy the requirements for design phase surveys of subsequent production vessels.

A2 APPLICATION

This Annex is normative for vessels being assessed under Survey Categories V, W, X and Y in Table 1. It is informative as an option for Survey Category Z..

A3 APPLICATION FOR DESIGN TYPE APPROVAL

An application for the design type approval for a specific vessel design shall be lodged by the builder or its nominated representative established within Australia with the Authority within which the vessel is manufactured or imported. The application shall include:

- a) the name and address of the builder and, if the application is lodged by the nominated representative, his name and address in addition; and
- b) the technical documentation specified in Clause A5.

A4 PROTOTYPE OR SPECIMEN VESSEL

An Authority (which may include an recognised organisation acting on its behalf) shall ascertain and attest that a prototype or specimen vessel, representative of the production envisaged, meets the provisions of the NSCV that apply to it under Clause 3.6.

The applicant shall place at the disposal of the Authority a prototype or specimen, representative of the production envisaged. Design type approval may cover several versions of the vessel provided that the differences between the versions do not affect the level of safety. The Authority may request further specimens if needed for carrying out the test program.

A5 TECHNICAL DOCUMENTATION

The technical documentation shall enable the conformity of the vessel with the requirements of the NSCV to be assessed. It shall, as far as relevant for such assessment, cover the design, manufacture and operation of the vessel (see NSCV Part B Annex D).

A6 SCOPE OF DESIGN TYPE APPROVAL ASSESSMENT

The Authority shall:

- a) agree with the applicant the location where the examinations and necessary tests shall be carried out;
- b) examine the technical documentation, verify that the prototype or specimen has been manufactured in conformity with the technical documentation and identify the elements which have been designed in accordance with the relevant provisions of the NSCV, as well as the

components that have been designed without applying the relevant provisions of those standards;

- c) perform or have performed the appropriate examinations and necessary tests to check whether proposals for solutions that differ from the deemed-to-satisfy provisions of the NSCV qualify as equivalent solutions;
- d) perform or have performed the appropriate examinations and necessary tests to check whether, where the builder has chosen to apply the relevant standards, these have actually been applied.

A7 DESIGN TYPE APPROVAL CERTIFICATE

Where the technical documentation and prototype or sample vessel meets the provisions of applicable legislation and applicable standards, the Authority shall issue an NSCV design type approval certificate to the applicant. The certificate shall contain the name and address of the builder; conclusions of the examination, and conditions for its validity; and the necessary data for identification of the approved type. A list of the relevant parts of the technical documentation shall be annexed to the certificate and a copy kept by the Authority. If the builder is denied design type certification, the Authority shall provide detailed reasons for such denial.

A8 PERIOD OF VALIDITY OF DESIGN TYPE CERTIFICATION

The design type approval shall be valid for a period of five years from the date of issue, except where:

- a) subsequent modifications have been made to the type approved design of a vessel that may affect compliance with applicable legislation and applicable standards, and a revision to the design type certificate has not been issued, or
- b) there have been changes to applicable legislation relevant to new vessels and the design no longer complies.

A9 SUBSEQUENT MODIFICATION TO DESIGN TYPE APPROVAL

Authority approval is required for modifications to the type approved design where such changes may affect the conformity with the safety outcomes or the prescribed conditions for use of the vessel. The applicant shall inform the Authority that issued the design type certificate of all proposed modifications to the approved vessel. Approval for modifications is given in the form of a revision to the original design type certificate.

A10 BUILDER TO RETAIN DOCUMENTATION

The builder (or its nominated representative established within Australia) shall keep, with the technical documentation, copies of NSCV design type certificates and their additions. These copies shall be retained for a period of not less than 10 years after the last vessel has been manufactured. Where neither the builder nor its nominated representative is established within Australia, the obligation to keep the technical documentation available shall be the responsibility of the person who places the vessel on the Australian market.

ANNEX B QUALITY MANAGEMENT

B1 SCOPE

This Annex describes the procedure for production quality management whereby compliance with this Annex will be deemed-to-satisfy the construction phase of the initial survey process applicable to certain production vessels.

B2 APPLICATION

This Annex is normative for vessels being assessed under Survey Category W in Tale 1. It is informative as an option for Survey Categories X and Y to Z..

B3 PRODUCT IDENTIFICATION

The builder or its nominated representative established within Australia shall affix the required marking (as per Annex I) to each vessel and draw up a written declaration of conformity (as per Annex H). The marking shall be accompanied by the distinguishing mark of the quality system approval organisation responsible for certifying the builder's quality management system.

B4 QUALITY SYSTEM

B4.1 Applicable standards

The builder shall have in place an approved quality management system meeting the requirements of AS/NZS ISO 9001 or equivalent. The quality system shall ensure compliance of vessels with the requirements of the NSCV that apply to them.

B4.2 Quality system to be approved

The builder shall operate an approved quality system for design, manufacture and final vessel inspection and testing and shall be subject to audit.

A JASANZ body shall assess the quality system to determine whether it satisfies the requirements referred to in item B4.3. It shall ensure compliance with these requirements in respect of quality systems that implement the relevant quality standard (AS/NZS ISO 9001).

B4.3 Quality system documentation

All the elements, requirements and provisions adopted by the builder shall be documented in a systematic and orderly manner in the form of written policies, procedures and instructions. This quality system documentation shall ensure a common understanding of the quality policies and procedures such as quality programs, plans, manuals and records. It shall contain, in particular, an adequate description of the:

- a) quality objectives and the organisational structure, responsibilities and powers of the management with regard to design and vessel quality;

- b) technical design specifications, including standards, that will be applied;
- c) design control and design verification techniques, processes and systematic actions that will be used when designing the vessels pertaining to the vessel category covered;
- d) corresponding manufacturing, quality control and quality assurance techniques, processes and systematic actions that will be used;
- e) examinations and tests that will be carried out before, during and after manufacture, and the frequency with which they will be carried out;
- f) quality records, such as inspection reports and test data, calibration data, qualification reports of the personnel concerned, or any other documents that are part of the quality system; and
- g) means to monitor the achievement of the required design and vessel quality and the effective operation of the quality system.

B5 BUILDER'S OBLIGATIONS

The builder shall undertake to fulfil the obligations arising out of the quality system as approved and to uphold it so that it remains adequate and efficient.

The builder shall manufacture vessels in accordance with the technical specification of the design type approval.

Where, as part of the production phase, the builder plans to adopt a system, process, material, component or other item that does not fully comply with the deemed-to-satisfy solution contained in the NSCV, the builder shall first confer with the Authority to show equivalence and amend the technical specification accordingly.

The builder shall declare in accordance with Annex H that each vessel concerned complies with the relevant plans and specifications of the design type approval and satisfies the requirements of the NSCV that apply to them.

ANNEX C INTERNAL CONTROL

C1 SCOPE

This Annex describes the procedure for internal design control, internal production control and internal commissioning control whereby compliance with this Annex, together with other measures put in place by the Authority, will be deemed-to-satisfy the design, construction or commissioning phases, respectively, of the initial survey process applicable to certain production vessels.

C2 APPLICATION

The provisions of this Annex applicable to internal design control are normative for vessels being assessed under Survey Category Z in Table 1.

The provisions of this Annex applicable to internal production control are normative for vessels being assessed under Survey Categories X, Y and Z in Table 1.

The provisions of this Annex applicable to internal commissioning control are normative for vessels being assessed under Survey Categories Y and Z in Table 1.

C3 MEANING OF INTERNAL CONTROL

Internal control refers to systems that a builder has in place to ensure that product conforms to specified standards. Internal control may be via a formally accredited quality system in accordance with AS/NZS ISO 9001, or by similar measures that need not be formally accredited by third parties.

C4 CONFORMANCE WITH SPECIFICATION

The builder shall take all measures necessary in order that the design, manufacturing and/or commissioning process shall ensure compliance of the manufactured vessels with the technical documentation referred in Clause C8 and with the requirements of NSCV that apply to them.

C5 EQUIVALENT SOLUTIONS

This clause applies only to vessels that are issued with a certificate of survey by the Authority. Where, as part of the relevant phase of construction, the builder plans to adopt a system, process, material, component or other item that does not fully comply with the deemed-to-satisfy solution contained in the NSCV, the builder shall first confer with the Authority to show equivalence and amend the technical specification accordingly. Internal control applies to vessels that satisfy either the deemed-to-satisfy solution or a generic equivalent solution under the NSCV.

NOTE Internal control systems cannot apply to a vessel relying on a local equivalent solution under the NSCV or an exemption under enabling legislation because of the need to assess equivalence or exemption taking into account the specific circumstances of the particular vessel. Vessels relying on a local equivalent solution or exemption may not be accepted in other jurisdictions.

C6 DECLARATION

The builder or its nominated representative established within Australia shall ensure that the vessels concerned satisfy the requirements of the NSCV that apply to them. The builder or its nominated representative established within Australia shall complete a written declaration of conformity for each vessel as per Annex H.

C7 MARKING

The builder or its nominated representative established within Australia shall affix the required marking as per Annex I to each vessel.

C8 DOCUMENTATION**C8.1 Obligation to document**

The builder shall establish the technical documentation described in C8.2.

C8.2 Content

Technical documentation shall enable the conformity of the vessels with the requirements of the NSCV to be assessed. It shall, as far as relevant for such assessment, cover the design, manufacture and operation of the vessel including relevant plans (see NSCV Part B Annex D)

Internal control shall include the following technical documentation to the extent applicable to the particular phase or phases of construction.

- a) The quality objectives and the organisational structure, responsibilities and powers of the management with regard to design and vessel quality.
- b) For internal design control, the design control and design verification techniques, processes and systematic actions that will be used when designing the vessels.
- c) For internal production control, the corresponding manufacturing techniques, quality control and quality assurance techniques, processes and systematic actions that will be used when manufacturing the vessels.
- d) For internal commissioning control, the corresponding equipment specifications and lists, commissioning procedures, quality control and quality assurance techniques, processes and systematic actions that will be used when commissioning vessels.
- e) The examinations and tests that will be carried out before, during and after the particular phase or phases of construction, and the frequency with which they will be carried out.
- f) The internal control records, such as inspection reports and test data, calibration data, qualification reports of the personnel concerned, or any other documents that are part of the internal control system.
- g) The means to monitor the achievement of the applicable standards and technical specifications and the effective operation of the internal control system.

- h) The confirmation documentation where equivalents under Clause C5 have received authority approval of equivalence.

C8.3 Retention of documents

The builder or its nominated representative established within Australia shall ensure that the documentation is retained for a period of not less than 10 years after the last vessel has been manufactured. The builder or its nominated representative established within Australia shall keep a copy of the declaration of conformity (as per Annex H) with the technical documentation.

C8.4 Availability to Authorities

The documentation shall be made available to each Authority for inspection purposes.

SUPERSEDED

ANNEX D SAMPLE VESSEL VERIFICATION BY AUTHORITY

D1 SCOPE

This Annex describes the procedure for sample vessel verification by the Authority whereby compliance with this Annex, together with other measures put in place by the Authority, can be deemed-to-satisfy the construction or commissioning phases of the initial survey process applicable to certain production vessels.

D2 APPLICATION

Sample verification by the Authority is normative for vessels being assessed under Survey Categories X and Y in Table 1.

The Annex is informative for vessels being assessed under Survey Category Z in Table 1.

Sample verification by the Authority is intended to apply only where the builder has in place an internal production and/or commissioning control system complying with Annex C.

D3 PROVISION OF SAMPLE PRODUCT

The builder or its representative shall furnish sample product to the Authority so that the Authority can carry out the appropriate examinations and tests in order to check the conformity of the vessel with the requirements of the NSCV.

D4 FREQUENCY OF SAMPLING

The builder shall make arrangements with the Authority for the latter to carry out regular product audits on vessels in the production series in order to verify the conformity of the vessels with the requirements of the NSCV. The Authority may also undertake random product audits.

NOTE: Typically, one in each five vessels of the production that is required to comply with applicable legislation and applicable standards would be audited.

D5 SCOPE OF SAMPLING

Sample vessels shall be individually examined and tested. Appropriate tests as set out in the NSCV or equivalent tests shall be carried out in order to verify their conformity with specification (the design type approval as described in the design type approval certificate and/or the requirements of the NSCV that apply to them).

The Authority shall draw up a written certificate of conformity relating to the tests carried out.

ANNEX E ITEMS SUBJECT TO SURVEY

E1 SCOPE

This Annex provides a deemed-to-satisfy survey schedule for the periodic inspection of vessels subject to survey.

It forms a normative part of this Standard.

E2 SURVEY SCHEDULE

E2.1 Survey cycles

The periodic survey inspections of a vessel shall be arranged in survey cycles of 5 years as shown in Tables E.1, E.2 and E.3. An intermediate survey having both in-water and out of water components shall be carried out during the third year of the survey cycle however, the interval between two consecutive out of water surveys shall not exceed 36 months. The last survey in a cycle shall be in the nature of a renewal survey that verifies the safety systems on the vessel essential for ensuring continuity in meeting the applicable safety standards required by legislation.

E2.2 Scope and depth of survey

The scope and depth of periodic survey of a vessel of a given survey category shall be determined for a given year within the survey cycle, as specified in Table E.1, Table E.2 and Table E.3. Surveys carried out within the survey cycle shall monitor the key aspects of the vessel's safety as specified in the tables.

NOTE: Periodic surveys within the survey cycle are not intended to confirm the vessel's compliance with every requirement of safety. These surveys may:

1. verify the continued existence, quantity and/or type of components, systems or equipment;
2. identify degradation in components, systems or equipment; and
3. verify the functionality of safety systems, components and equipment on the vessel.

E2.3 Ten yearly surveys

In addition to the items specified in Tables E.1, E.2 and E.3, the following inspections shall be carried out every tenth year:

- a) ultrasonic thickness for vessels having metallic hull;
- b) withdrawal of sample fastening for vessels having wooden hull;
- c) hull in way of removable ballast;
- d) verify internal foam buoyancy if not inspected in fifth year because of inaccessibility;
- e) internal hull inspection if not inspected in fifth year because of inaccessibility;
- f) pressure test all sea water pipes;
- g) non-destructive testing of shaft/rudder stock especially in way of keyway, taper and threads;

h) fuel tanks internal inspection.

E3 SAFETY MANAGEMENT SYSTEM

E3.1 Scope

Items to be audited shall include safety management documentation including all logbooks, records and manifests required to be maintained in accordance with the legislative requirements of the Authority.

NOTE: For further information please see Part E of NSCV.

E3.2 Application

The audits and any related surveys in respect of the safe operation of a vessel are intended to provide information and evidence regarding the ongoing assessment of the risks that indicate the operator's or owner's performance in respect of matters concerning safety.

E4 STEAM MACHINERY

E4.1 Scope

This Clause specifies additional requirements for periodic survey of steam machinery fitted on vessels for propulsion or other uses.

E4.2 Application

The survey of vessels fitted with steam machinery that operates at a temperature 300°C or less shall, in addition to Table E.1 or Table E.2, also comply with Table E.3.

NOTE: Saturated steam at a gauge pressure of 1.723 MPa (250 psi) has a temperature of 208° C.

The survey of vessels fitted with steam machinery that operates at a temperature above 300°C shall be in accordance with the requirements of a Classification Society.

NOTE: Machinery operating at a temperature above 300°C is likely to be high pressure or with high levels of superheat.

E4.3 Boiler inspectorate survey

Where a jurisdiction has Occupational Health and Safety Legislation that applies to the steam machinery within a vessel, that legislation has priority over this standard. Inspections that arise from such legislation may be substituted for the inspections specified in Clause E4.2 to the extent that the survey covers matters within Table E.1 or Table E.2 and Table E.3.

Table E.1— Schedule for survey Level 1 vessels

Equipment	General Survey				
	Year of 5-Year survey cycle				
	1	2	3	4	5
	Annual in-water survey	Annual in-water survey	In and out of the water survey	Annual in-water survey	Renewal in/out of the water survey
General Items					
Hull markings & signage	Verify	Verify	Verify	Verify	Verify
Equipment marked	Examine	Examine	Examine	Examine	Examine
LPG system alarms/sensors	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test
Toilets	Verify	Verify	Verify	Verify	Verify
Sewage system/holding tanks (External)	Verify	Verify	Examine	Verify	Examine
Modifications/additions	Examine	Examine	Examine + Verify	Examine	Examine + Verify
Lightship verification (draft or weight check, re-incline or roll period test as appropriate)					Trial
Operational management					
Safety management plan	Verify	Verify	Verify	Verify	Verify
Logbooks	Verify	Verify	Verify	Verify	Verify
Maintenance records	Verify	Examine + Verify + Test	Verify	Verify	Verify
Training/drills record	Verify	Verify	Verify	Examine + Verify + Test	Verify
Manifests	Verify	Verify	Verify	Verify	Verify
Documentation					
Class certification	Verify	Verify	Verify	Verify	Verify
Stability documents	Verify	Verify	Verify	Verify	Verify
Vessel survey record book	Verify	Verify	Verify	Verify	Verify
Compass deviation card	Verify	Verify	Verify	Verify	Verify

Equipment	General Survey				
	Year of 5-Year survey cycle				
	1	2	3	4	5
	Annual in-water survey	Annual in-water survey	In and out of the water survey	Annual in-water survey	Renewal in/out of the water survey
LPG compliance certificate	Verify	Verify	Verify	Verify	Verify
IOPP certificate	Verify	Verify	Verify	Verify	Verify
Electrical installation test results including insulation test	Verify	Verify	Verify	Verify	Verify
Fire detection & smothering system test certificates	Verify	Verify	Verify	Verify	Verify
Radio survey certificate	Verify	Verify	Verify	Verify	Verify
Load line certificate (where issued)	Verify	Verify	Verify	Verify	Verify
Safety Equipment					
Lifejackets, stowage & signage	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Lifejacket lights	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Lifebuoys	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Lifebuoy self igniting lights	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test
Lifebuoy buoyant line	Examine	Examine	Examine	Examine	Examine
Buoyant appliance(s)	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Internal buoyancy (where accessible)		Examine	Examine	Examine	Verify
Life raft	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Rescue boat & launching arrangements	Examine + Verify	Examine + Verify + Trial	Examine + Verify + Trial	Examine + Verify + Trial	Examine + Verify + Trial
Dinghy (if counted for lifesaving purposes)	Examine + Verify	Examine + Verify + Trial	Examine + Verify + Trial	Examine + Verify + Trial	Examine + Verify + Trial
Hydro release	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify

Equipment	General Survey				
	Year of 5-Year survey cycle				
	1	2	3	4	5
	Annual in-water survey	Annual in-water survey	In and out of the water survey	Annual in-water survey	Renewal in/out of the water survey
Magnetic compass	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Charts & navigation publications	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Aids (radar, GPS)	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Torches (spares)	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test
Depth sounder/lead line	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test
Barometer	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Clock/watch	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Boat hook	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Medical supplies	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Nav lights	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test
Nav lights separately fused	Examine	Examine	Examine	Examine	Examine
Radio/communications	Examine + Test	Examine + Test	Examine + Test	Examine + Test	Examine + Test
Dedicated radio battery, light & voltmeter/hydrometer	Examine + Test	Examine + Test	Examine + Test	Examine + Test	Examine + Test
Intercom/PA	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test
Sound signal: whistle/bell/horn	Examine + Test	Examine + Test	Examine + Test	Examine + Test	Examine + Test
Day shapes	Examine	Examine	Examine	Examine	Examine
(Daylight) signalling light	Examine + Test	Examine + Test	Examine + Test	Examine + Test	Examine + Test
Code flags – N,C,A,B	Examine	Examine	Examine	Examine	Examine

Equipment	General Survey				
	Year of 5-Year survey cycle				
	1	2	3	4	5
	Annual in-water survey	Annual in-water survey	In and out of the water survey	Annual in-water survey	Renewal in/out of the water survey
Pyrotechnics & container	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
EPIRB	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test
Structure					
Bulwarks & guardrails, stairs, grab rails	Examine	Examine	Examine + Test	Examine	Examine + Verify + Test
Weather tight doors & hatches	Examine	Examine	Examine + Test	Examine	Examine + Verify + Test
Hull/deck external	Examine (above WL)	Examine (above WL)	Examine	Examine (above WL)	Examine
Hull/deck internal (where readily accessible)	Examine	Examine	Examine	Examine	Examine
Tanks/voids/peaks (internal, rolling % sample of tanks)			Examine		Examine
Escapes	Examine	Examine	Examine	Examine	Examine + Verify
Freeing ports/scuppers	Examine	Examine	Examine	Examine	Examine + Verify
W'house & D'house windows/side scutters & deadlights	Examine	Examine	Examine	Examine	Examine
Passenger boarding access including gangways	Examine	Examine	Examine	Examine	Examine
Seating/berths	Examine	Examine	Examine	Examine	Examine
Anchoring & mooring system					
Anchor/s	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Chain/shackles	Verify	Verify	Examine + Verify	Verify	Examine + Verify
Chain locker internal			Examine		Examine

Equipment	General Survey				
	Year of 5-Year survey cycle				
	1	2	3	4	5
	Annual in-water survey	Annual in-water survey	In and out of the water survey	Annual in-water survey	Renewal in/out of the water survey
Anchor Rope	Examine	Examine	Examine		Examine
Windlass	Examine	Examine + Test	Examine + Test	Examine + Test	Examine + Test
Sea anchor	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Bollards/cleats	Examine	Examine	Examine	Examine	Examine
Machinery					
Engine/gearbox linkages	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial
Instruments (eg RPM, alarm, ammeter)	Verify	Verify	Verify	Verify	Verify
Essential auxiliary machinery	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial
Refrigeration equipment	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Compressors/air receivers/safety relief valves	Examine	Examine + Verify + Trial	Examine + Verify + Trial	Examine + Verify + Trial	Examine + Verify + Trial
Remote engine fans & pumps shut-off closing devices	Test	Test	Test	Test	Test
SW inlet/discharge valves & skin fittings	Examine + Test (internal, visual)	Examine + Test (internal, visual)	Examine + Test	Examine + Test (internal, visual)	Examine + Test
Seawater piping	Examine	Examine	Examine	Examine	Examine
Engine room bilge cleanliness	Examine	Examine	Examine	Examine	Examine
Machinery guards	Examine	Examine	Examine	Examine	Examine
Exhaust lagged	Examine	Examine	Examine	Examine	Examine
Fuel system					
Fuel tank fill/vents	Examine	Examine	Examine	Examine	Examine
Fuel lines hose clips	Examine	Examine	Examine	Examine	Examine
Remote fuel shut-off	Test	Test	Test	Test	Test
Self closing gauge glasses	Examine + Test	Examine + Test	Examine + Test	Examine + Test	Examine + Test

Equipment	General Survey				
	Year of 5-Year survey cycle				
	1	2	3	4	5
	Annual in-water survey	Annual in-water survey	In and out of the water survey	Annual in-water survey	Renewal in/out of the water survey
Cofferdams (for internal petrol tanks)	Examine	Examine	Examine	Examine	Examine
Fuel tanks external			Examine		Examine
Electrical bonding	Examine	Examine	Examine	Examine	Examine
Bilge system					
Bilge pumps (manual and/or power)	Examine + Test	Examine + Test	Examine + Test	Examine + Test	Examine + Test
Piping system/material			Examine		Examine
Bilge manifold & valves (clearly marked)	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test	Examine + Verify + Test
Bilge low/high water alarms	Examine + Test	Examine + Test	Examine + Test	Examine + Test	Examine + Test
Non-return valves	Verify	Verify	Verify	Verify	Verify
Stern gear					
Shaft coupling & stern gland	Examine	Examine	Examine	Examine	Examine + Test
“P” or “A” bracket			Examine		Examine + Test
Stern bearing(s) & propeller shaft			Examine + Test		Examine + Test
Propeller(s)			Examine		Examine
Rudder			Examine		Examine
Rudder stock & bearings			Examine + Test		Examine + Test
Steering gear	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial
Emergency steering arrangements	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial
Keel cooling			Examine		Examine
Fire protection system					
Fixed fire fighting system	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Fire detectors and fire	Examine + Test	Examine + Test	Examine + Test	Examine + Test	Examine + Test

Equipment	General Survey				
	Year of 5-Year survey cycle				
	1	2	3	4	5
	Annual in-water survey	Annual in-water survey	In and out of the water survey	Annual in-water survey	Renewal in/out of the water survey
alarms					
Structural fire protection	Examine	Examine	Examine	Examine	Examine + Verify
Portable fire extinguishers	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Fire pump/piping	Trial	Trial	Trial	Trial	Trial
Emergency fire pump	Trial	Trial	Trial	Trial	Trial
Hydrants/hoses/nozzles	Trial	Trial	Trial	Trial	Trial
Accommodation smoke alarm	Test	Test	Test	Test	Verify + Test
Fire blanket (gallery)	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify	Examine + Verify
Fire bucket & lanyard	Examine	Examine	Examine	Examine	Examine
Engine room fire flaps	Test	Test	Test	Test	Test
Evacuation signs/procedures	Verify	Verify	Verify	Verify	Verify
Electrical system					
Wiring	Examine	Examine	Examine	Examine	Examine
Switchgear	Examine	Examine	Examine	Examine	Examine + Trial
Distribution boards	Examine	Examine	Examine	Examine	Examine
Source of electrical power including emergency power	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial
Emergency lighting	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial	Examine + Trial
Batteries	Examine	Examine	Examine	Examine	Examine
Battery installation	Examine	Examine	Examine	Examine	Examine
Shore supply	Examine	Examine	Examine	Examine	Examine
RCDs	Verify	Verify	Verify	Verify	Verify
Earth Leakage Monitoring	Examine	Examine	Examine	Examine	Examine

Equipment	General Survey				
	Year of 5-Year survey cycle				
	1	2	3	4	5
	Annual in-water survey	Annual in-water survey	In and out of the water survey	Annual in-water survey	Renewal in/out of the water survey

NOTE: Checks/inspections under electrical system do not invite electrical testing. See test results under documentation.

Table E.2—Schedules for Survey Level 2 Vessels

Equipment	Year of 5-year cycle				
	1	2	3	4	5
	Annual survey	Annual survey	Intermediate in/out of the water survey	Annual survey	Renewal in/out of the water survey
General Items					
Hull markings & signage			Verify		Verify
Equipment marked			Examine		Examine
LPG system alarms/sensors			Examine + Verify + Test		Examine + Verify + Test
Modifications/additions			Examine		Examine + Verify
Lightship verification (e.g. weighbridge check)					Trial
Operational management					
Safety management plan			Verify		Verify
Logbooks			Verify		Verify
Maintenance records			Verify		Verify
Training/drills records			Examine + Verify + Test		Verify
Manifests			Verify		Verify
Documents					
Vessel survey record book			Verify		Verify
Compass deviation card			Verify		Verify

Equipment	Year of 5-year cycle				
	1	2	3	4	5
	Annual survey	Annual survey	Intermediate in/out of the water survey	Annual survey	Renewal in/out of the water survey
LPG compliance certificate			Verify		Verify
Radio survey certificate			Verify		Verify
Electrical installation test results if voltage exceeds 50 V			Verify		Verify
Safety equipment					
Lifejackets, stowage & signage			Examine + Verify		Examine + Verify
Lifejacket lights			Examine + Verify		Examine + Verify
Lifebuoys			Examine + Verify		Examine + Verify
Lifebuoy self igniting lights			Examine + Verify + Test		Examine + Verify + Test
Lifebuoy buoyant line			Examine		Examine
Buoyant appliance/s			Examine + Verify		Examine + Verify
Internal buoyancy			Examine		Verify
Life raft			Examine + Verify		Examine + Verify
Hydro release			Examine + Verify		Examine + Verify
Magnetic compass			Examine + Verify		Examine + Verify
Compass correction			Verify		Verify
Charts & navigation publications			Examine + Verify		Examine + Verify
Aids (GPS)			Examine + Verify		Examine + Verify
Torches (spares)			Examine + Verify + Test		Examine + Verify + Test
Depth sounder/lead line			Examine + Verify		Examine + Verify
Clock/watch			Examine + Verify		Examine + Verify
Boat hook			Examine + Verify		Examine + Verify
Medical supplies			Examine + Verify		Examine + Verify
Nav lights			Examine + Test		Examine + Test
Radio/communications			Examine + Test		Examine + Test

Equipment	Year of 5-year cycle				
	1	2	3	4	5
	Annual survey	Annual survey	Intermediate in/out of the water survey	Annual survey	Renewal in/out of the water survey
Dedicated radio battery, light & voltmeter/hydrometer			Examine + Test		Examine + Test
Sound signal: whistle/bell/horn			Examine + Test		Examine + Test
Day shapes			Examine		Examine
Pyrotechnics & container			Examine + Verify		Examine + Verify
EPIRB			Examine + Verify + Test		Examine + Verify + Test
Structure					
Bulwarks & guardrails, stairs, grab rails			Examine		Examine + Verify + Test
Hull/deck external			Examine		Examine
Hull/deck internal (where readily accessible)			Examine		Examine
Tanks/voids/peaks (internal, rolling % sample of tanks)					Examine
Freeing ports/scuppers			Examine		Examine
W'house & D'house windows/side scuttles & deadlights			Examine		Examine
Passenger seating/berths			Examine		Examine
Anchoring & mooring system					
Anchor(s)			Examine + Verify		Examine + Verify
Chain/shackles			Verify		Examine + Verify
Chain locker internal					Examine
Anchor rope			Examine		Examine
Sea anchor			Examine + Verify		Examine + Verify
Bollards/cleats			Examine		Examine
Machinery					
Propulsion machinery			Examine		Examine + Trial

Equipment	Year of 5-year cycle				
	1	2	3	4	5
	Annual survey	Annual survey	Intermediate in/out of the water survey	Annual survey	Renewal in/out of the water survey
Engine/gearbox linkages			Examine		Examine + Trial
Instruments (e.g. RPM, alarm, ammeter)			Verify		Verify
SW inlet/discharge valves & skin fittings			Examine + Test		Examine + Test
Safety relief valves			Verify		Verify
Engine space bilge cleanliness			Examine		Examine
Machinery guards			Examine		Examine
Fuel system					
Fuel tanks fill/vents			Examine		Examine
Fuel lines hose clips			Examine		Examine
Remote fuel shut-off			Examine + Test		Examine + Test
Cofferdams (for internal petrol tanks)			Examine		Examine
Fuel tanks external					Examine
Bilge system					
Bilge pumps (manual or power)			Examine + Test		Examine + Test
Stern Gear					
Shaft coupling & stern gland			Examine		Examine + Test
“P” or “A” bracket			Examine		Examine
Stern bearing(s) & propeller shaft(s)			Examine		Examine
Propeller(s)			Examine		Examine
Rudder			Examine		Examine
Rudder, stock & bearings					Examine + Test
Steering gear			Examine + Trials		Examine + Trials
Fire protection system					
Portable fire			Examine + Verify		Examine + Verify

Equipment	Year of 5-year cycle				
	1	2	3	4	5
	Annual survey	Annual survey	Intermediate in/out of the water survey	Annual survey	Renewal in/out of the water survey
extinguishers					
Fire blanket (gallery)			Examine + Verify		Examine + Verify
Fire bucket & lanyard			Examine + Verify		Examine + Verify
Electrical system					
Wiring			Examine		Examine
Batteries			Examine		Examine
Battery installation			Examine		Examine
Emergency source of electrical power			Examine + Trial		Examine + Trial

NOTES:

1. The checks/inspections under electrical systems do not involve electrical testing. See test results under documentation.
2. For electrical installations involving low voltage see Table E.1.

Table E.3—Survey Schedule for steam machinery

Equipment	General Vessel Survey Level 1				
	Year of 5-year cycle				
	1	2	3	4	5
	Annual in-water	Annual survey	Intermittent in/out of the water	Annual survey	Renewal in/out of the water
Safety and relief valves to be set at the required working pressure.	Trial/Verify	Trial/Verify	Trial/Verify	Trial/Verify	Trial/ Verify
Internal boiler and boiler mountings, pressure vessels and evaporators holding steam under pressure.	Examine (After 1st renewal)	Examine	Examine + Test	Examine	Examine + Test
Steam propulsion machinery	As per Table E.1 or E.2	As per Table E.1 or E.2	As per Table E.1 or E.2	As per Table E.1 or E.2	As per Table E.1 or E.2
Steam auxiliary machinery	As per Table E.1 or E.2	As per Table E.1 or E.2	As per Table E.1 or E.2	As per Table E.1 or E.2	As per Table E.1 or E.2
Pumps used for pumping fuel oil, condensate and boiler feed.		Examine	Test	Examine	Internal Examine +Trial
Condensers		Examine	Test	Examine	Internal Examine +Test
Copper steam pipes having an internal diameter exceeding 75 mm. (Annealed and hydraulic test).			Verify +Test (50% after 1st renewal)		Verify +Test (50% after 1st renewal)
Selected lengths of steel steam pipes having an internal diameter exceeding 75 mm (hydraulic test).					Test (25% after 1st renewal)
Electrical equipment including control and alarm systems on both burner and boiler	Verify + Trial	Verify + Trial	Verify + Trial	Verify + Trial	Verification to the requirement of AS/NZS 3000 or AS/NZS 3017

ANNEX F SURVEY REGIME FOR COMMERCIAL VESSELS

F1 SCOPE

This Annex specifies various survey level categories of vessels based on the risk factors.

This Annex is a normative part of this standard

Table F.1— Survey Regime for Commercial Vessels

Survey Regime	Vessel Class				
	Class 1 (passenger vessels)	Class 2 (trading vessels)	Class 3 (fishing vessels)	Class 4 (hire and drive)	Other
Survey Level 1 Vessels - Full Initial & Periodic surveys	Class 1 – all operational areas	Non-propelled barges of high risk	3A		Ferries in chains
		2A	3B		
		2B and 2C > 7.5 m	3C > 7.5 m		
		2D, 2E and 2C < 7.5 m of high risk			
Survey Level 2 Vessels - Full Initial & Partial Periodic Survey		2C < 7.5 m with pax		4C (both o/night and not o/night)	
		2D with pax		4D o/night	
		2E with pax		4E o/night	
Survey Level 3 Vessels - Initial Survey Only		2C < 7.5 m with no pax	3C < 7.5 m		
		2D > 7.5 m with no pax	3D > 7.5 m	4D (not o/night) > 7.5 m	
		2E > 7.5 m with no pax	3E > 7.5 m	4E (not o/night) > 7.5 m	
Compliance to NSCV required (no pre-determined survey)		Non-propelled barges (sheltered, < 24mt)** (excl. spudded)			
Other Compliance with level flotation standards, recreational boat equipment standards or ABP and/or NSCV Part E		2D < 7.5 m no pax*	3D < 7.5 m*	4D < 7.5 m (not o/night)	Sailing school - YA
		2E < 7.5 m no pax*	3E < 7.5 m*	4E < 7.5 m (not o/night)	

A1

Definitions/Acronyms

ABP – Australian Builders Plate

A1 | YA –Yachting Australia

Commercial Vessel: As defined in Part B of NSCV.

*: Class 2 vessel which is not a higher risk

**: Barge, not of higher risk

High risk barges include the following:

- a) Barges used to carry passengers.
- b) Barges used to carry bulk petroleum or gas products or other dangerous goods.
- c) Barges used for living or entertainment.
- d) Barges used to operate a pile frame.
- e) Barges equipped with a crane or davit exceeding 3 tonne capacity.
- f) Barges equipped with dredging machinery having a total brake power of 500kW.
- g) Landing barges.
- h) Barges primarily used for towage.

High risk class 2 include the following:

- (i). Dredges having a total brake power of 500kW or more or over 24m.
- (ii). Tugs / vessels primarily used for towage.
- (iii). Vessels carrying bulk petroleum or gas products or other dangerous goods.
- (iv). Vessels having a crane or davit exceeding 3 tonne capacity.
- (v). Support vessels in the offshore oil industry.
- (vi). Vessels operating more than 5nm off the mainland.

NOTE: Class 2A vessels, class 2B vessels, and Class 2C > 7.5 m with passenger vessels are subject to 'full survey' requirements. The 'high risk class 2' category is intended to capture any other Class 2 vessels which should also be subject to 'full survey'.

ANNEX G RISK-BASED APPROACH TO VARYING SURVEY SCHEDULE

G1 SCOPE

This Annex provides a systematic risk-based approach for an Authority to vary a survey schedule in order to assure compliance with a five yearly cycle.

This Annex is normative for compliance with this standard.

G2 APPLICATION

This Annex applies to all vessels that are subject to periodic inspections. It may also be applied to vessels that are not subject to periodic inspections but which are audited for compliance.

G3 OBJECTIVE

The objective of this Annex is to facilitate a consistent and responsive approach to survey schedule that:

- a) reinforces positive behaviour where an operator's commitment effectively minimises risk.
- b) reduces risks associated with negative behaviour by increasing the scope, depth and/or frequency of inspections, and, consequently promotes an increase in an operator's commitment to safety.
- c) allows a more efficient utilisation of resources of an Authority by focusing effort on safety issues of highest risk.

G4 METHODOLOGY

G4.1 Risk index

The vessel monitoring priority matrix as per Table G.1 provides an analytical tool to focus resources where they are needed most when inspecting vessels. It also strengthens consistent implementation of risk-management principles in vessel monitoring and implements NSCV Part E.

The vessel monitoring priority matrix comprises six compliance risk status levels (from very low to urgent) on the horizontal axis and two vessel risk categories (greater and general) on the vertical axis.

- *Vessel Risk Category*: means a vessel's risk category or grouping due to the class and type of the vessel that usually does not change during the life of the vessel determined in accordance with G 4.2.
- *Compliance Risk Status*: means the risk assessment level that can change following a vessel inspection (compliance score allocated) or after an expiration of time determined in accordance with G 4.3.

An Authority may vary the scope, depth and/or frequency of periodic inspections given in Annex E in accordance with the survey schedule for various vessel monitoring priorities provided in Table G.2.

G4.2 Vessel risk category

G4.2.1 General

A vessel shall initially be assigned a vessel risk category that reflects the potential, when compared to other vessels, to cause environmental

damage, serious injury, or death because of the nature of the vessel's operations.

There are two vessel risk categories that will not change during the course of a vessel's life (unless there is a change to her class or type):

1. Greater Vessel Risk Category vessels (refer to NSCV Part E, for more information)
2. General Vessel Risk Category vessels

Table G.1— Vessel monitoring priority matrix

Category	Compliance risk status					
	0–Very low	1–Low	2–Medium	3–High	4–Very high	5–Urgent
Greater Risk Category	Lower monitoring priority	Base-level monitoring priority	Base-level monitoring priority	Higher monitoring priority	Enforcement directive issued.	Enforcement directive requiring suspension of operations.
General Risk Category	Very low monitoring priority	Lower monitoring priority	Base-level monitoring priority	Base-level monitoring priority	Higher monitoring priority.	Enforcement directive requiring suspension of operations.

G4.2.2 Greater vessel risk category

Greater Risk Category vessels are vessels that have a greater potential, when compared to other vessels, to cause environmental damage, serious injury, or death because of the nature of the vessel's operations and include:

- a) Class 1A, 2A, and 3A vessels;
- b) Class 1B, 1C, 1D & 1E greater than 35m in measured length;
- c) Class 1B and 1C vessels that berth one or more passengers or berth more than 12 persons or carry more than 36 passengers;
- d) Class 1D and 1E vessels that berth one or more passengers or berth more than 12 persons or carry more than 75 passengers;
- e) Class 2B vessels greater than 35m in measured length;
- f) Class 2 vessels that are:
 - i) cargo vessels constructed or adapted for the carriage of bulk fluid cargoes (tankers);
 - ii) vessels that are designated to carry dangerous goods;
 - iii) vessels involved in towage operations (tug boats);

- iv) vessels designed to carry wheeled cargo such as automobiles, trucks, semi-trailer trucks, trailers and railroad cars that can be driven on and off the vessel on their own wheels (vehicular ferries);
- v) support vessels to offshore oil industry;
- vi) vessels that berth one or more passenger(s);
- vii) vessels that berth more than 12 persons;
- viii) barges equipped with a crane or davit exceeding 3 tonnes;
- ix) dredges with dredging equipment having a total brake horse power of 500kW or more than 24m in length; or
- g) Class 3 vessels that:
 - i) are designated to carry dangerous goods;
 - ii) berth more than 12 persons; or
 - iii) tow aquaculture structures.
- h) All fast craft.

G4.2.3 General vessel risk category

All other vessels not falling within the definition of greater vessel risk category shall be assigned a general vessel risk category.

G4.3 Compliance risk status

G4.3.1 General

The vessel operation shall be monitored by the Authority for compliance with applicable legislation and applicable standards over a period of time sufficient to establish trends in the safety compliance of the vessel and to determine the compliance risk status of the vessel.

The compliance risk status of a vessel derives from the inspection of a vessel by an Authority and the allocation of a compliance score (between 6 and 150) after evaluating the six elements in Clause G4.3.2 against applicable legislation and applicable standards legislative requirements.

G4.3.2 Determining a vessel's compliance score

To determine a vessel's compliance score an Authority shall make an assessment of the vessel and its operation covering the following six elements:

- a) vessel documentation – compliance score between 1 (compliant) and 25 (no documents);
- b) vessel condition, construction and arrangement – compliance score between 1 (compliant) and 25 (unsafe condition requiring rectification);
- c) machinery and steering gear – compliance score between 1 (compliant) and 25 (inoperable);
- d) safety equipment – allocated score between 1 (compliant) and 25 (no equipment);
- e) fire systems, pumping and electrical systems – compliance score between 1 (compliant) and 25 (no equipment); and

- f) vessel operations, crew competency and adequacy of crew numbers – compliance score between 1 (compliant) and 25 (unlicensed or unregistered).

A vessel shall be allocated a compliance score (between 6 and 150) by adding the scores together for the above six elements. An enforcement directive adds 50 to the compliance score and an enforcement directive that a vessel must not be operated adds 100 to the compliance score.

G4.3.3 Determining a vessel's compliance risk status

0-Very low risk status:

A vessel that is fully compliant with all applicable Standards resulting in an allocated compliance score of 8 or less or is not operational.

1-Low risk status:

A vessel that is compliant with all applicable Standards but has a minor non-conformity resulting in a compliance score of 8 to 15.

2- Medium risk status:

A vessel that is compliant with most applicable Standards but has some non-conformities resulting in a compliance score of 16 to 25.

3- High risk status:

A vessel that is non-compliant with applicable Standards having significant non-conformities resulting in a compliance score of 26 to 50.

4- Very high risk status:

A vessel that is non-compliant with applicable Standards rendering the vessel in an unsafe condition requiring an enforcement directive resulting in a compliance score of 51 to 100.

5- Urgent risk status:

A vessel that is non-compliant with applicable Standards rendering the vessel in an unsafe condition that endangers life requiring an enforcement directive that the vessel must not be operated resulting in a compliance score of 100 or more.

G4.3.4 Raising compliance risk status

An Authority may raise a vessel's compliance risk status if they are satisfied that:

- a) the vessel requires a higher risk status after an incidental visual inspection while on location warranting further investigation;
- b) the local intelligence, local knowledge of operators or failure to comply with an enforcement directive requires the vessel to have a higher compliance risk status;
- c) the vessel has been involved in a marine incident; or
- d) the vessel has not been inspected as required under the survey schedule applicable to the vessel.

G4.4 Adjustments to the periodic survey schedule

Subject to Clause 4.6 **Error! Reference source not found.**, the Authority may adjust the survey schedule to reflect the increase or decrease in

monitoring priority indicated by the vessel monitoring priority matrix in accordance with Table G.2.

Table G.2 — Survey schedule for various vessel monitoring priorities

Vessel monitoring priority	Survey schedule
Enforcement directive issued	As directed by Authority under Clause 4.6.2
Higher monitoring priority	Survey frequency, depth and scope shall be increased.
Base level monitoring priority	5 year survey cycle as shown in Table E.1, E.2 and E.3
Lower monitoring priority	Reduction in the frequency of inspections in the 5 year cycle and / or reduction in depth and scope of items inspected (see Clause 4.6.3).
Very low monitoring priority	No survey in 2nd and 4th year for Table E.1; reduced scope and depth for Table E.2.

ANNEX H BUILDER'S DECLARATION OF CONFORMITY

H1 SCOPE

This Annex specifies the contents of a declaration of conformity made by a builder or its nominated representative in Australia in fulfilling obligations specified in Clause C6. The Annex is normative for compliance with this standard.

H2 FORM OF DECLARATION

The declaration of conformity shall be in the form of a statutory declaration enforceable under the law of the jurisdiction in which the declaration was made.

NOTE: There are legal consequences for making false statements on a Statutory Declaration.

H3 CONTENT OF THE DECLARATION

The statutory declaration shall contain the following:

- a) The name and address of the builder.
- b) The name and address of the representative of the builder established within Australia, or, if appropriate, of the person responsible for placing the vessel on the market.
- c) A description of the vessel including measured length, model and construction material.
- d) A statement that the vessel complies with the requirements of the NSCV and applicable legislation that apply.
- e) Details of permanent markings.
- f) Documentation required in Annex B, C as appropriate are retained.
- g) Design type approval details where appropriate.

NOTE: A suggested format for the statutory declaration follows

- h) Survey category.

Statutory declaration of conformity by a builder or its nominated representative

Name of builder	
Address of builder	
Name of nominated representative	
Address of nominated representative	
Vessel model	
Measured length (m)	
Survey category	
Vessel construction material	
Intended NSCV Category of service	
Intended number of persons to be carried	
Intended number of passengers to be carried	
Unique identifying number permanently affixed to the vessel	
Design type approval number, if applicable	
Has the builder a formal quality management system accredited to AS/NZS ISO 9001 that applied to the production of this vessel?	
Nominated custodian of records pertaining to the manufacture of this vessel, to be retained for the next 10 years.	

I,, of
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do hereby solemnly declare and affirm that:

- a) the vessel that is the subject of this declaration has been designed / produced / commissioned (strike out words that do not apply) to comply with the applicable standards contained in the National Standard for Commercial Vessels and enabling legislation according to my knowledge and belief based on information collected by me relevant to this vessel,
- b) conforms to the technical specification of the design type approval, if applicable, and
- c) the information provided by me above is true.

And I make this solemn declaration, as to the matters aforesaid, according to the law in this behalf made—and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Signed.....

Dated.....

Before me

ANNEX I REQUIRED MARKING OF VESSEL

I1 SCOPE

This Annex specifies requirements for the marks issued by an Authority permanently affixed to a vessel during construction for the purposes of identifying the vessel and tracing its history throughout its subsequent career.

I2 APPLICATION

As specified in Clause 3.2, a vessel shall have permanently affixed to its hull a mark assigned by the Authority.

This mark shall be recorded on all documentation for that vessel.

I3 LOCATION

The mark referred above (in Clause I2) shall be in an easily visible position on the vessel that also facilitates subsequent location for the purposes of reading. The position shall be one of the following, in order of preference:

- a) The engine room side of either the forward or aft engine room bulkhead, on the port side or near the entry to the engine room.
- b) The inside of the hull adjacent to and to port of the propulsion machinery.
- c) The port aft side of the collision bulkhead, or the first bulkhead from bow
- d) The port inside of the transom.

I4 DESIGN TYPE APPROVAL NUMBER

A vessel that has been type approved under Clause 3.7 shall also have permanently affixed to its hull a design type-approval number.