Condition Assessment Programme for Yachts

September 2011

Guidance Note
NI 582 DT R00 E

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BUREAU VERITAS

MARINE DIVISION
GENERAL CONDITIONS

ARTICLE 1

1.1. - BUREAU VERITAS is a Society the purpose of whose Marine Division (the "Society") is the classification (" Classification ") of any ship or vessel or structure of any type or part of it or system therein collectively hereinafter referred to as a "Unit" whether linked to shore, river bed or sea bed or not, whether operated or located at sea or in inland waters or partly on land, including submarines, hovercrafts, drilling rigs, offshore installations of any type and of any purpose, their related and ancillary equipment, subsea or not, such as well head and pipelines, mooring legs and mooring points or otherwise as decided by the Society.

The Society:

- prepares and publishes Rules for classification, Guidance Notes and other documents ("Rules");
- issues Certificates, Attestations and Reports following its interventions ("Certificates");
- publishes Registers.

1.2. - The Society also participates in the application of National and International Regulations or Standards, in particular by delegation from different Governments. Those activities are hereafter collectively referred to as " Certification ".

1.3. - The Society can also provide services related to Classification and Certification such as ship and company safety management certification; ship and port security certification, training activities; all activities and duties incidental thereto such as documentation on any supporting means, software, instrumentation, measurements, tests and trials on board.

1.4. - The interventions mentioned in 1.1., 1.2. and 1.3. are referred to as " Services ". The party and/or its representative requesting the services is hereinafter referred to as the " Client ". **The Services are prepared and carried out on the assumption that the Clients are aware of the International Maritime and/or Offshore Industry (the "Industry") practices.**

1.5. - The Society is neither and may not be considered as an Underwriter, Broker in ship's sale or chartering, Expert in Unit's valuation, Consulting Engineer, Controller, Naval Architect, Manufacturer, Shipbuilder, Repair yard, Charterer or Shipowner who are not relieved of any of their expressed or implied obligations by the interventions of the Society.

ARTICLE 2

2.1. - Classification is the appraisement given by the Society for its Client, at a certain date, following surveys by its Surveyors along the lines specified in Articles 3 and 4 hereafter on the level of compliance of a Unit to its Rules or part of them. This appraisement is represented by a class entered on the Certificates and periodically transcribed in the Society's Register.

2.2. - Certification is carried out by the Society along the same lines as set out in Articles 3 and 4 hereafter and with reference to the applicable National and International Regulations or Standards.

2.3. - **It is incumbent upon the Client to maintain the condition of the Unit after surveys, to present the Unit for surveys and to inform the Society without delay of circumstances which may affect the given appraisement or cause to modify its scope.**

2.4. - The Client is to give to the Society all access and information necessary for the safe and efficient performance of the requested Services. The Client is the sole responsible for the conditions of presentation of the Unit for tests, trials and surveys and the conditions under which tests and trials are carried out.

ARTICLE 3

3.1. - **The Rules, procedures and instructions of the Society take into account at the date of their preparation the state of currently available and proven technical knowledge of the Industry. They are not a standard or a code of construction neither a guide for maintenance, a safety handbook or a guide of professional practices, all of which are assumed to be known in detail and carefully followed at all times by the Client.**

Committees consisting of personalities from the Industry contribute to the development of those documents.

3.2. - The Society only is qualified to apply its Rules and to interpret them. Any reference to them has no effect unless it involves the Society's intervention.

3.3. - The Services of the Society are carried out by professional Surveyors according to the applicable Rules and to the Code of Ethics of the Society. Surveyors have authority to decide locally on matters related to classification and certification of the Units, unless the Rules provide otherwise.

3.4. - **The operations of the Society in providing its Services are exclusively conducted by way of random inspections and do not in any circumstances involve monitoring or exhaustive verification.**

ARTICLE 4

4.1. - The Society, acting by reference to its Rules:

- reviews the construction arrangements of the Units as shown on the documents presented by the Client;
- conducts surveys at the place of their construction;
- classes Units and enters their class in its Register;
- surveys periodically the Units in service to note that the requirements for the maintenance of class are met.

The Client is to inform the Society without delay of circumstances which may cause the date or the extent of the surveys to be changed.

ARTICLE 5

5.1. - The Society acts as a provider of services. This cannot be construed as an obligation bearing on the Society to obtain a result or as a warranty.

5.2. - The certificates issued by the Society pursuant to 5.1. here above are a statement on the level of compliance of the Unit to its Rules or to the documents of reference for the Services provided for.

In particular, the Society does not engage in any work relating to the design, building, production or repair checks, neither in the operation of the Units or in their trade, neither in any advisory services, and cannot be held liable on those accounts. Its certificates cannot be construed as an implied or express warranty of safety, fitness for the purpose, seaworthiness of the Unit or of its value for sale, insurance or chartering.

5.3. - The Society does not declare the acceptance or commissioning of a Unit, nor of its construction in conformity with its design, that being the exclusive responsibility of its owner or builder, respectively.

5.4. - The Services of the Society cannot create any obligation bearing on the Society or constitute any warranty of proper operation, beyond any representation set forth in the Rules, of any Unit, equipment or machinery, computer software of any sort or other comparable concepts that has been subject to any survey by the Society.

ARTICLE 6

6.1. - The Society accepts no responsibility for the use of information related to its Services which was not provided for the purpose by the Society or with its assistance.

6.2. - If the Services of the Society cause to the Client a damage which is proved to be the direct and reasonably foreseeable consequence of an error or omission of the Society, its liability towards the Client is limited to ten times the amount of fee paid for the Service having caused the damage, provided however that this limit shall be subject to a minimum of eight thousand (8,000) Euro, and to a maximum which is the greater of eight hundred thousand (800,000) Euro and one and a half times the above mentioned fee.

The Society bears no liability for indirect or consequential loss such as e.g. loss of revenue, loss of profit, loss of production, loss relative to other contracts and indemnities for termination of other agreements.

6.3. - All claims are to be presented to the Society in writing within three months of the date when the Services were supplied or (if later) the date when the events which are relied on of were first known to the Client, and any claim which is not so presented shall be deemed waived and absolutely barred. Time is to be interrupted thereafter with the same periodicity.

ARTICLE 7

7.1. - Requests for Services are to be in writing.

7.2. - **Either the Client or the Society can terminate as of right the requested Services after giving the other party thirty days' written notice, for convenience, and without prejudice to the provisions in Article 8 hereunder.**

7.3. - The class granted to the concerned Units and the previously issued certificates remain valid until the date of effect of the notice issued according to 7.2. here above subject to compliance with 2.3. here above and Article 8 hereunder.

7.4. - The contract for classification and/or certification of a Unit cannot be transferred neither assigned.

ARTICLE 8

8.1. - The Services of the Society, whether completed or not, involve, for the part carried out, the payment of fee upon receipt of the invoice and the reimbursement of the expenses incurred.

8.2. Overdue amounts are increased as of right by interest in accordance with the applicable legislation.

8.3. - The class of a Unit may be suspended in the event of non-payment of fee after a first unfruitful notification to pay.

ARTICLE 9

9.1. - The documents and data provided to or prepared by the Society for its Services, and the information available to the Society, are treated as confidential. However:

- clients have access to the data they have provided to the Society and, during the period of classification of the Unit for them, to the **classification file** consisting of survey reports and certificates which have been prepared at any time by the Society for the classification of the Unit;
- copy of the documents made available for the classification of the Unit and of available survey reports can be handed over to another Classification Society, where appropriate, in case of the Unit's transfer of class;
- the data relative to the evolution of the Register, to the class suspension and to the survey status of the Units, as well as general technical information related to hull and equipment damages, are passed on to IACS (International Association of Classification Societies) according to the association working rules;
- the certificates, documents and information relative to the Units classed with the Society may be reviewed during certificating bodies audits and are disclosed upon order of the concerned governmental or inter-governmental authorities or of a Court having jurisdiction.

The documents and data are subject to a file management plan.

ARTICLE 10

10.1. - Any delay or shortcoming in the performance of its Services by the Society arising from an event not reasonably foreseeable by or beyond the control of the Society shall be deemed not to be a breach of contract.

ARTICLE 11

11.1. - In case of diverging opinions during surveys between the Client and the Society's surveyor, the Society may designate another of its surveyors at the request of the Client.

11.2. - Disagreements of a technical nature between the Client and the Society can be submitted by the Society to the advice of its Marine Advisory Committee.

ARTICLE 12

12.1. - Disputes over the Services carried out by delegation of Governments are assessed within the framework of the applicable agreements with the States, international Conventions and national rules.

12.2. - Disputes arising out of the payment of the Society's invoices by the Client are submitted to the Court of Nanterre, France.

12.3. - **Other disputes over the present General Conditions or over the Services of the Society are exclusively submitted to arbitration, by three arbitrators, in London according to the Arbitration Act 1996 or any statutory modification or re-enactment thereof. The contract between the Society and the Client shall be governed by English law.**

ARTICLE 13

13.1. - **These General Conditions constitute the sole contractual obligations binding together the Society and the Client, to the exclusion of all other representation, statements, terms, conditions whether express or implied. They may be varied in writing by mutual agreement.**

13.2. - The invalidity of one or more stipulations of the present General Conditions does not affect the validity of the remaining provisions.

13.3. - The definitions herein take precedence over any definitions serving the same purpose which may appear in other documents issued by the Society.

GUIDANCE NOTE NI 582

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Condition Assessment Programme for Yachts

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Section 1 General Principles

Section 2 Yacht CAP Process

Section 3 Rating Calculation Methodology

SECTION 1 GENERAL PRINCIPLES

1 General

1.1 Introduction

1.1.1 The aim of this Guidance Note is to provide the Owner with the methods and criteria applied by Bureau Veritas (BV), always acting within the scope of the Marine General Conditions, to carry out the BV Yacht Condition Assessment Programmes, as defined in [2].

This Guidance Note contains the requirements to assess the condition of the hull structure, equipment and machinery of a yacht compared with its assumed condition at the delivery time, taking into account any possible further major refitting.

On completion of the survey, a Yacht CAP Rating is assigned to the Yacht based on the results of the inspections at the time of the verification and on the assumptions made regarding the new built condition. BV Yacht CAP is not an evaluation system which could be used directly as one of the tools to define the actual economical value of a yacht.

The Yacht CAP Survey may cover the entire yacht or may be limited to some parts only, according to the Yacht CAP Survey System described below. It is carried out through inspections, tests, checks and structural assessment.

The Yacht CAP Survey should be completed in a time period not exceeding six weeks, however different approaches can be agreed by BV on a case by case basis.

The Yacht CAP may be carried out with the yacht afloat, in dry condition and/or including sea trials, depending on the programme requested by the Owner.

1.2 Application

1.2.1 This Guidance Note applies to all Yachts and Large Yachts, of any size and displacement and classed or not classed by BV.

Works of art and mobile furniture on all yachts; sails, masts and rigging on sailing yachts are not covered by this activity.

2 Yacht CAP programmes

2.1 General

2.1.1 The BV Yacht CAP services offer consist of three assessment programmes, as follow:

- Standard CAP
- Extended CAP
- Comfort CAP.

The Standard CAP and Extended CAP aim at assessing the overall condition of the Yacht from the individual assessment of the following modules:

- Hull structure
- Hull and Deck Equipment and Fittings
- Propulsion and Auxiliary Machinery, Fittings and Systems
- Bridge, Navigational and Radio Equipment and Systems.

The Comfort CAP aims at assessing the noise and vibration levels in passenger cabins and public and crew areas.

2.2 Standard CAP

2.2.1 The Standard CAP consists of

- a yacht documentation review
- an assessment of the external hull over the waterline, the internal structures where readily accessible and the superstructures
- an assessment of the onboard equipment, installations, systems and machinery that can be made accessible without dry-docking or underwater survey.

A sea trial is required to achieve the best rating, Superior Condition.

2.3 Extended CAP

2.3.1 The Extended CAP consists of

- a Standard CAP
- an assessment of all the internal structures
- an assessment of the external hull condition below the waterline and the anti-fouling paint condition
- an assessment of the hull appendages and equipments below the waterline.

This programme requires a dry-dock or an underwater survey to be carried out.

A sea trial is required to achieve the best rating, Superior Condition.

2.4 Comfort CAP

2.4.1 The Comfort CAP consists on an assessment during sea trials of the noise and vibration levels at various speeds in passenger cabins and public and crew areas.

The Comfort CAP can be carried out as a complementary programme to the Standard CAP or the Extended CAP.

3 CAP Rating definition

3.1 BV CAP Rating

3.1.1 The BV rating system for Yacht Condition Assessment is defined in Tab 1.

Table 1 : Cap Ratings

1	Superior Condition	• Examination and/or measurements carried out with the results showing either minimal or no deterioration from the 'as new' condition • Superior maintenance condition exists • No preventive or corrective maintenance is required.
2	Good Condition	• Examination and/or measurements carried out with the results showing a level of deterioration from the 'as new' condition • No requirement for preventive or corrective maintenance.
3	Acceptable Condition	• Examination and/or measurements carried out with the results showing that condition would be acceptable to class rules requirements • No imminent corrective maintenance is required. Preventive maintenance may be required to halt deterioration.
4	Poor Condition	• Examination and/or measurements carried out with the results showing defects, deficiencies or condition, below what would be acceptable to class rules requirements • Imminent corrective maintenance is required.

SECTION 2 YACHT CAP PROCESS

1 General

1.1 Scope

1.1.1 The purpose of this Section is to detail the different steps generally followed through a CAP project, from the programme definition to the Certificate and report issue.

1.2 CAP definition and request

1.2.1 The Owner is to provide BV with the following information through the CAP request:

- Yacht main particulars
- CAP programme(s) selected from the BV Yacht CAP services offer
- Expected place and date of survey
- Expected rating to be achieved on completion of the survey

The BV local office representative is to provide all the necessary assistance to the Owner for defining and preparing the CAP request.

2 Planning preparation and kick-off meeting

2.1 Documentation

2.1.1 The Owner should provide at least the following documents to BV for the preparation of the CAP Survey planning:

- main particulars
- general arrangement plan
- capacity plan
- midship section
- history of main hull work and repairs.

2.2 Planning preparation

2.2.1 The CAP Surveyor is to prepare a CAP Survey Plan which includes the internal checklists relevant to the parts of the yacht to be inspected, the list and types of tests to be carried out and the documents (i.e. engine maintenance reports, thickness measurements reports, UT reports, etc) needed.

The Hull Structure survey planning is to include in particular the scope of close-up inspection and UTM, where applicable.

The scope should generally cover at least

- the scope of the next renewal survey for Hull Structure based on the yacht's age, as defined in Part A of NR500 “Rules for the Classification and Certification of Yachts”
- a close-up inspection of the areas identified from the history of the main structural works and repairs

The Survey Plan is to be agreed with the Owner.

2.3 Kick-off meeting

2.3.1 Before starting the survey, a kick off meeting is to be arranged between the Owner representative and the BV CAP Surveyor to discuss the conditions under which the inspections and tests will be carried out. Special attention is to be paid by the Owner representative to identifying the internal spaces, preparing the tanks for survey and the safety procedure to be applied for the functional tests.

The Owner shall ensure that the spaces to be inspected are properly cleaned and safely accessible. It is also their responsibility to ensure that machinery and systems are ready to be tested. Provision is to be made to allow BV Surveyor to perform the planned close-up surveys and attend the thickness measurements, and the appropriate safety level is to be ensured and maintained at all times.

Recognised or approved service suppliers are to execute the testing and measurements, where applicable.

3 Assessment survey on-board

3.1 General

3.1.1 The survey is carried out by a qualified CAP Surveyor according to the Survey Plan prepared by BV and agreed with the Owner.

On completion of the assessment, the CAP Surveyor provides the Owner with a list of defects or deficiencies to be up-graded to achieve the expected rating defined in the CAP request. The Owner is then to decide to carry out the repairs and up-grades or not.

3.2 Yacht documents review

3.2.1 The Yacht documents review consists of verifying the availability and up-date of the documents expected to be on-board, considering the yacht's length, type, service (charter or pleasure) and flag.

The review should include, where applicable:

- Yacht documents, Certificates of Classification, others certificates and their validity
- Yacht Management System if any
- Documents, diagrams and manuals relevant to the yacht, onboard machinery, systems and equipment
- Record of work and maintenance.

A detailed list of documents present or missing on-board will be attached in appendix to the Yacht CAP report, for information purpose.

3.3 Hull Structure

3.3.1 The Hull Structure survey consists on assessing the structural condition through an overall inspection, a close-up inspection and thickness measurements and non-destructive testing where relevant.

The inspection aims at identifying and assessing structural defects: cracks, corrosion, deformation, indents, buckling, coating defect, osmosis…

3.4 Equipment, Machinery, Fittings and Systems

3.4.1 The Equipment, Machinery, Fittings and Systems assessment is split into:

- Hull and Deck Equipment and Fittings
- Propulsion and Auxiliary Machinery, Fittings and Systems
- Bridge, Navigational and Radio Equipment and Systems.

The assessment is carried out for each item through a visual inspection, a function test and additional tests where applicable. Equipments and systems will be inspected having regard to the general condition, leakages, supporting devices, instrumentation, emergency arrangements.

In general the surveyor will not request the opening up of equipment for inspection but may request that a unit be disassembled for inspection should the item show signs of deterioration in external condition or during function testing. The operation and the maintenance programme declared by the clients should be in conformity with the guidance provided by the equipment manufacturers. Previous records for systems and machinery under assessment are consulted in order to identify recurrent problems.

3.5 Noise and vibration

3.5.1 The survey aims at assessing the noise and vibration levels in passenger cabins and public and crew areas through measurements on-board at harbour and at sea.

4 Assessment of repairs

4.1 General

4.1.1 The survey consists of assessing the yacht's condition after the repairs and carried out by the Owner, if any.
On completion of the survey, the ratings are up-graded accordingly.

5 Reporting

5.1 General

5.1.1 On completion of the condition assessment surveys, the CAP surveyor provides a report that details the extent of surveys carried out, the condition of the vessel and vessel sub systems at the time of survey and details of repairs and upgrades. Photographic records illustrating the general condition of the Yacht and repairs carried out on-board are to be included.

The BV CAP report shall normally be issued within the range of one month from the end of survey depending on the scope of the client's requirements for CAP survey and certification.

The CAP report is provided in both paper copy and electronic copy according to the client's needs and requirements for reporting.

All BV condition assessment reports include an executive summary which gives an overview of the surveys carried out, the survey findings and the CAP rating(s) applied.

6 Certificate

6.1 General

6.1.1 The Yacht CAP Certificate shall be issued after completion and validation of the CAP report.

The Yacht CAP certificate indicates for each Yacht CAP programmes selected by the Owner - namely Standard CAP, Extended CAP, Comfort CAP - the final rating assigned, as per Tab 1.

The Yacht CAP certificates issued by Bureau Veritas do not have validity. They are issued to certify that the vessel has a specific CAP rating on a specific date.

Table 1 : Cap Ratings

1	Superior Condition
2	Good Condition
3	Acceptable Condition
4	Poor Condition

SECTION 3 RATING CALCULATION METHODOLOGY

1 Standard CAP rating

1.1 Standard CAP rating calculation process

1.1.1 The Standard CAP rating assigned to the Yacht depends on the weighted average rating R_{wa} of the individual ratings assigned to each module with the weight defined in Tab 1.

Each Module is first assigned a rating from 1 to 4 as described in [1.2].

A weighted average rating Rwa is then calculated and rounded to the first digit.

Where the second digit ranges from 0 to 4, the first digit is rounded to the lower value. Otherwise, the first digit is rounded to the upper value.

The final Standard CAP Rating assigned to the Yacht according to Tab 2.

Table 1 : Modules' weight for Rwa calculation

Modules	Weight %
Hull structure	40
Hull and Deck Equipment and Fittings	20
Propulsion and Auxiliary Machinery, Fittings and Systems	30
Bridge, Navigational and Radio Equipment and Systems	10

Table 2 : Final standard CAP Rating

Standard CAP Rating		Condition
Superior Condition	1	$1 \leq R_{wa} < 1.5$ AND Sea Trial carried out
Good Condition	2	$1.5 \leq R_{wa} < 2.5$
Acceptable Condition	3	$2.5 \leq R_{wa} \leq 3$
Poor Condition	4	$3 < R_{wa}$ OR any rating = 4

1.2 Modules' ratings calculation process

1.2.1 'Hull Structure' rating calculation process

The Hull Structure is divided into compartments and/or areas.

Each compartment and/or area is then assigned a rating assessing the following:

- Visual Structure Condition
- Protective Coating Condition
- Measured Wastage (only applicable for steel and aluminium Yachts)

The ratings are assigned based on the criteria defined in App 1.

An average rating is then calculated and rounded to the first digit for each compartment/area.

Where the second digit ranges from 0 to 4, the first digit is rounded to the lower value. Otherwise, the first digit is rounded to the upper value.

The Hull Structure Final Rating is the average rating, rounded to the first integer, of the compartments/areas average ratings.

Where the first digit ranges from 0 to 4, the rating is rounded to the lower value (or better rating). Otherwise, the rating is rounded to the upper value (worse rating).

1.2.2 'Hull and Deck Equipment and Fittings' rating calculation process

The 'Hull and Deck Equipment and Fittings' is divided into groups of items

Each group is then subdivided into a list of items tailor-made for the Yacht.

Each item is then assigned a rating assessing the following:

- Visual Condition
- Function Test
- Insulation Test, where applicable
- Lub / Hydraulic Oil analysis, where applicable

The ratings are assigned based on the criteria defined in App 2.

For each item, an average rating is then calculated and rounded to the first digit.

Where the second digit ranges from 0 to 4, the first digit is rounded to the lower value. Otherwise, the first digit is rounded to the upper value.

Where no 'Function Test' is carried out, the best average rating that can be assigned to an item is 3.

Where no 'Insulation Test' or 'Oil Analysis' is carried out while expected, the best average rating that can be assigned to an item is 2.

For each group, an average rating is then calculated and rounded to the first integer.

Where the first digit ranges from 0 to 4, the rating is rounded to the lower value (or better rating). Otherwise, the rating is rounded to the upper value (worse rating).

The 'Hull and Deck Equipment and Fittings' is the average of the groups' ratings, rounded to the first integer.

Where the first digit ranges from 0 to 4, the rating is rounded to the lower value (or better rating). Otherwise, the rating is rounded to the upper value (worse rating).

1.2.3 'Propulsion and Auxiliary Machinery, Fittings and Systems' rating calculation process

Please refer to [1.2.2].

1.2.4 'Bridge, Navigation and Radio Equipment' rating calculation process

Please refer to [1.2.2].

2 Extended CAP rating

2.1 Extended CAP rating calculation process

2.1.1 Please refer to Standard CAP rating calculation process defined in [1].

3 Comfort CAP rating

3.1 Comfort CAP rating calculation process

3.1.1 The Comfort CAP rating assigned to the Yacht is the average of the ratings assigned to the following modules:

- Noise levels
- Vibration levels for the overall frequency weighted r.m.s. velocity criteria
- Vibration levels for Single amplitude peak vibration levels from 5 Hz to 100 Hz
- Vibration levels for Single amplitude peak vibration levels from 1 Hz to 5 Hz

The average of the modules' ratings is rounded to an integer from 1 to 3.

Where the first digit ranges from 0 to 4, the rating is rounded to the lower value (or better rating). Otherwise, the rating is rounded to the upper value (worse rating).

Each module is assigned a rating which is the average of the grades assigned to the noise and vibration measurements according to the procedures in NR467 “Rules for the Classification of Steel Ships”, Part E, Ch 6, Sec 1 and Part E, Ch 6, Sec 6.

The average of the grades is rounded to an integer from 1 to 3.

Where the first digit ranges from 0 to 4, the rating is rounded to the lower value (or better rating). Otherwise, the rating is rounded to the upper value (worse rating).

APPENDIX 1 ASSESSMENT CRITERIA FOR HULL STRUCTURE

1 General

1.1 Visual Structure Condition

1.1.1 Ratings for visual structure condition are defined in Tab1.

1.2 Coating Condition

1.2.1 The coating condition is assessed against the definitions of coating conditions "GOOD", "FAIR" and "POOR" given in IMO Resolution A.744(18)/ Annex B-1.2.9 and IACS UR Z10s (see Tab2).

Table 1 : Visual Structure Condition Ratings Criteria

1	Structure found without visible sign of corrosion or defects (crack, indent, deformation, pitting, grooving…).
2	Structure found with only minor sign of corrosion or defects - slight indent or deformation without stiffeners affected, scattered pitting. For composite yacht, indent without de-lamination identified with NDT.
3	Structure found with some sign of corrosion or defects which would not affect the compliance with requirements of NR500 “Rules for Yachts”. For composite yacht, indent with de-lamination identified with NDT which would not affect the compliance with requirements of NR500 “Rules for Yachts”.
4	Structural defects which would not comply with the requirements of NR500 “Rules for Yachts”.

Table 2 : Coating Condition Ratings

BV CAP Rating	IACS/IMO Condition	IACS Definition
1	GOOD	Condition with spot rusting on less than 3% of the area under consideration without visible failure of the coating. Rusting at edges or welds, must be on less than 20 % of edges or weld lines in the area under consideration.
2	FAIR	Condition with breakdown of coating or rust penetration on less than 20 % of the area under consideration. Hard rust scale rust penetration must be less than 10 % of the area under consideration. Rusting at edges or welds must be on less than 50 % of edges or weld lines in the area under consideration.
3	POOR	Condition with breakdown of coating or rust penetration on more than 20% OR hard rust scale on more than 10% of the area under consideration OR local breakdown concentrated at edges or welds on more than 50 % of edges or weld lines in the area under consideration.
N/C	n/a	No protective coatings fitted.
N/A	n/a	Not applicable.

Note 1: Soft Coatings or Semi Hard Coatings are not rated in the scope of this document, however where these are found to have been fitted then these are to be identified within the CapHSR report.
Note 2: Spot rusting is rusting in spots without visible failure of coating.
Note 3: Blistering of coatings is identified as coating failure according to IACS Rec. 87. Appendix A.

1.3 UTM assessment

1.3.1 Where possible the Owner should arrange for thickness measurements to be carried out in the presence of the CAP surveyor however if the ultrasonic gauging has been conducted within the last 6 months prior to the CAP survey then this may be taken into account when determining the overall gauging requirement for the CAP survey, provided that a class surveyor was present at the time of the gauging.

Where an Owner wishes to submit a UTM report that has been accepted by another IACS society, or submits a UTM report previously accepted by BV which was carried out more than 6 months prior to the CAP survey then these are to be reviewed on a case by case basis. In such case the date and scope of UTM gauging reports is to be highlighted in the executive summary of the CAP report. (Note: the UTM Supplier must be certified as a service supplier as per IACS UR S17 & Z10s)

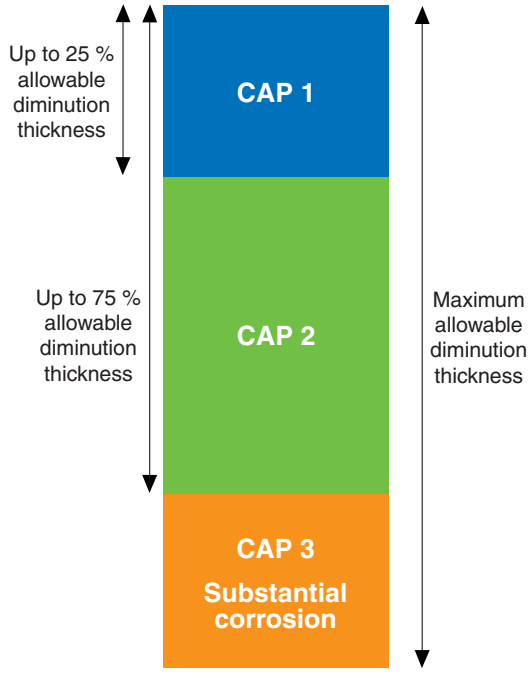
Wastage of structure ratings are assigned by reviewing the UTM readings against permissible diminution of structure, as given in the tables of acceptance criteria provided in BV Class Rules Part A.

Ratings are applied for wastage of structure as defined in Tab 3 and Fig 1.

Table 3 : UTM Condition Assessment Ratings for Wastage of Structure

Rating	Rating Description	%-age of permissible diminution
1	Superior Condition	0 to 25%
2	Good Condition	25 to 75%
3	Acceptable Condition	75 to 100%
4	Poor Condition	More than 100%

Figure 1 : UTM Condition Assessment Ratings for Wastage of Structure



APPENDIX 2 ASSESSMENT CRITERIA FOR EQUIPMENT, MACHINERY, FITTINGS AND SYSTEMS

1 General

1.1 Visual Inspection

1.1.1 Visual inspections are carried out to assess the overall condition of each unit together with its appurtenances, bedplates and supports (See Tab 1).

The surveyor inspects for evidence of damage, deformation, cracks, leakages, coatings breakdown, corrosion, pitting, erosion etc,.

1.2 Function tests

1.2.1 Function tests are carried out on equipment under working conditions with the results assessed against the manufacturers' operational criteria (See Tab 2). e.g. Pumps and compressors are to be test run and their performance assessed, closing appliances are to be tested for full range of movement, machinery safety devices are to be tested and proved, alarms and instrumentation are to be actuated and inspected, pipelines are to be pressure tested etc,.

All Hull and Deck Equipment and Fittings' equipment is required to be function tested. It is recognised that some vessel's systems will not be able to have their performance fully tested however these can be assessed by supplemental means such as simulation, level testing and chemical analysis.

Table 1 : Visual Inspection Rating Criteria

Rating 1	Rating 2	Rating 3	Rating 4
Items and systems visually examined and/or measurements carried out with the results showing either minimal or no deterioration from the 'as new' condition.	Items and systems visually examined and/or measurements carried out with the results showing a level of deterioration from the 'as new' condition.	Items and systems visually examined and/or measurements carried out with the results showing deterioration from the 'as new' condition but within that acceptable according to class rules and IACS requirements.	visually examined and/or measurements carried out with the results showing significant deterioration from the 'as new' condition below that acceptable according to class rules and IACS requirements.
No deficiencies affecting safe operation exist.	No deficiencies affecting safe operation exist.	No deficiencies affecting safe operation exist.	Deficiencies affecting safe operation exist.
Measurements are within 0-25% of allowable tolerances and/or recommendations.	Measurements are within 25-75% of allowable tolerances and/or recommendations.	Measurements are within 75-100% of allowable tolerances and/or recommendations.	Measurements exceed tolerances and/or recommendations.
Structure and supports show superficial reductions from 'as new' scantlings.	Structure and supports show a level of deterioration from 'as new' scantlings.	Structure and supports show reduction from 'as new' scantlings.	Structure and supports show significant reduction from 'as new' scantlings.
Good cosmetic maintenance condition exists.	Fair cosmetic maintenance condition exists.	Poor cosmetic maintenance condition exists.	
No system leakages exist.	No system leakages exist.	No system leakages exist.	System leakages exist.
No preventive or corrective maintenance is required.	No preventive or corrective maintenance is required.	No imminent corrective maintenance is required. Preventive maintenance may be required to halt deterioration.	Corrective maintenance is required.

Table 2 : Function Test Rating Criteria

Rating 1	Rating 2	Rating 3	Rating 4
Items and systems and where applicable, their attached valves, operating devices and equipment, locking devices, fittings, instrumentation etc,. are function tested with the results reaching rated values and/or full operation with either minimal or no deterioration from the 'as new' condition.	Items and systems and where applicable, their attached valves, operating devices and equipment, locking devices, fittings, instrumentation etc,. are function tested with the results showing a level of deterioration in rated values and/or full operation from the 'as new' condition without affecting safe operation.	Items and systems and where applicable, their attached valves, operating devices and equipment, locking devices, fittings, instrumentation etc,. are function tested with the results showing deterioration in rated values and/or full operation from the 'as new' condition but within that acceptable according to maker's, class rules and IACS requirements without affecting safe operation.	Items and systems and where applicable, their attached valves, operating devices and equipment, locking devices, fittings, instrumentation etc,. are function tested with the results showing significant deterioration from the 'as new' condition below that acceptable according to maker's, class rules and IACS requirements. Found with deficiencies affecting safe operation.
Power output or power generation is able to maintain 96-100% of the designed value for sustainable/continuous rating.	Power output or power generation is able to maintain 90- 95% of the designed value for sustainable/continuous rating.	Power output or power generation is able to maintain 85-89% of the designed value for sustainable/continuous rating.	Power output or power generation is not able to maintain at least 85% of the designed value for sustainable/continuous rating.
Operating temperatures well within tolerances.	Operating temperatures are within tolerances.	Operating temperatures are within tolerance but approaching limits of tolerances or nearing alarm condition.	Operating temperatures exceed tolerances or are in alarm condition.
Attached safety devices, alarms, trips etc,. function tested and proved 100% operational.	Attached safety devices, alarms, trips etc,. function tested and proved 100% operational.	Attached safety devices, alarms, trips etc,. function tested and proved 100% operational.	Attached safety devices, alarms, trips etc,. function tested and showing defects or deficiencies.
Piping systems reach required test pressure without leakages or pressure drop-off.	Piping systems reach required test pressure without leakages or pressure drop-off.	Piping systems reach required test pressure without leakages or pressure drop-off.	Piping systems do not reach required test pressure and/or leakages or pressure drop-off exists.
No preventive or corrective maintenance is required.	No preventive or corrective maintenance is required.	Preventive maintenance may be required to halt deterioration.	Corrective maintenance is required.

1.3 Insulation Testing

1.3.1 Insulation 'Megger' testing is to be carried out in accordance with Class requirements and the Rating Criteria defined in Tab 3 should be applied.

Note 1: The overall rating assigned for an item cannot be higher than the Megger test rating if a rating 4 is assigned for the megger results

1.4 Lubrication Oil / Hydraulic Oil Analysis

1.4.1 Lubrication analysis rating criteria are defined in Tab 4.

Where appropriate, lubricating and hydraulic oil samples are collected from respective systems and are to be tested for evidence of deterioration of the oil or of equipment parts and for suitability of the oil for continued use.

Systems and equipment that would be normally be expected to have oil analysis carried out are usually fitted with sumps or 'top up' or 'header' tanks.

In general lube oil sample reports may be accepted if carried out within three months prior to the start date of CAP surveys.

Table 3 : Insulation 'Megger'' Testing Rating Criteria

Rating 1	Rating 2	Rating 3	Rating 4
Over 100 Meg ohms.	20-100 Meg ohms.	Below 20 Meg ohms but above Class minimum requirements.	Below Class minimum requirements. Corrective action is required.

Table 4 : Lubrication Analysis Rating Criteria

Rating 1	Rating 2	Rating 3	Rating 4
Analysis results show either minimal or no deterioration from the 'as new' condition as per the manufacturers new oil specification.	Analysis results show some deterioration from the 'as new' oil condition.	Analysis results show that the lubricant or hydraulic oil is reaching the end of its useful life but it's still suitable for continued operation.	Analysis results confirm that the system oil requires renewal.
No presence of wear particles No contamination by water or foreign particles.	Analysis shows minimal presence of wear particles . Analysis shows minimal contamination by water or foreign particles.	Analysis shows the presence of wear particles or contamination by water or foreign particles without affecting the safe operation of the system or equipment.	Significant presence of wear particles . Significant contamination by water or foreign particles.
No corrective action or preventive measures are required	No corrective action or preventive measures are required.	Preventive measures may be required to halt oil deterioration	Corrective action is required.