



Rules for the Certification of Sailing Rigs

Effective from 1 July 2016

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GENERAL CONDITIONS

Definitions:

"Administration" means the Government of the State whose flag the Ship is entitled to fly or under whose authority the Ship is authorized to operate in the specific case.

"IACS" means the International Association of Classification Societies.

"Interested Party" means the party, other than the Society, having an interest in or responsibility for the Ship, product, plant or system subject to classification or certification (such as the owner of the Ship and his representatives, the ship builder, the engine builder or the supplier of parts to be tested) who requests the Services or on whose behalf the Services are requested.

"Owner" means the registered owner, the ship owner, the manager or any other party with the responsibility, legally or contractually, to keep the ship seaworthy or in service, having particular regard to the provisions relating to the maintenance of class laid down in Part A, Chapter 2 of the Rules for the Classification of Ships or in the corresponding rules indicated in the specific Rules.

"Rules" in these General Conditions means the documents below issued by the Society:

- (i) Rules for the Classification of Ships or other special units;
- (ii) Complementary Rules containing the requirements for product, plant, system and other certification or containing the requirements for the assignment of additional class notations;
- (iii) Rules for the application of statutory rules, containing the rules to perform the duties delegated by Administrations;
- (iv) Guides to carry out particular activities connected with Services;
- (v) Any other technical document, as for example rule variations or interpretations.

"Services" means the activities described in Article 1 below, rendered by the Society upon request made by or on behalf of the Interested Party.

"Ship" means ships, boats, craft and other special units, as for example offshore structures, floating units and underwater craft.

"Society" or "TASNEEF" means Tasneef and/or all the companies in the Tasneef Group which provide the Services.

"Surveyor" means technical staff acting on behalf of the Society in performing the Services.

Article 1

1.1. The purpose of the Society is, among others, the classification and certification of ships and the certification of their parts and components. In particular, the Society:

- (i) sets forth and develops Rules;
- (ii) publishes the Register of Ships;
- (iii) issues certificates, statements and reports based on its survey activities.

1.2. The Society also takes part in the implementation of national and international rules and standards as delegated by various Governments.

1.3. The Society carries out technical assistance activities on request and provides special services outside the scope of classification, which are regulated by these general conditions, unless expressly excluded in the particular contract.

Article 2

2.1. The Rules developed by the Society reflect the level of its technical knowledge at the time they are published. Therefore, the Society, although committed also through its research and development services to continuous updating of the Rules, does not guarantee the Rules meet state-of-the-art science and technology at the time of publication or that they meet the Society's or others' subsequent technical developments.

2.2. The Interested Party is required to know the Rules on the basis of which the Services are provided. With particular reference to Classification Services, special attention is to be given to the Rules concerning class suspension, withdrawal and reinstatement. In case of doubt or inaccuracy, the Interested Party is to promptly contact the Society for clarification. The Rules for Classification of Ships are published on the Society's website: www.tasneef.ae.

2.3. The Society exercises due care and skill:

- (i) in the selection of its Surveyors
- (ii) in the performance of its Services, taking into account the level of its technical knowledge at the time the Services are performed.

2.4. Surveys conducted by the Society include, but are not limited to, visual inspection and non-destructive testing. Unless otherwise required, surveys are conducted through sampling techniques and do not consist of comprehensive verification or monitoring of the Ship or of the items subject to certification. The surveys and checks made by the Society on board ship do not necessarily require the constant and continuous presence of the Surveyor. The Society may also commission laboratory testing, underwater inspection and other checks carried out by and under the responsibility of qualified service suppliers. Survey practices and procedures are selected by the Society based on its experience and knowledge and according to generally accepted technical standards in the sector.

Article 3

3.1. The class assigned to a Ship, like the reports, statements, certificates or any other document or information issued by the Society, reflects the opinion of the Society concerning compliance, at the time the Service is provided, of the Ship or product subject to certification, with the applicable Rules (given the intended use and within the relevant time frame).

The Society is under no obligation to make statements or provide information about elements or facts which are not part of the specific scope of the Service requested by the Interested Party or on its behalf.

3.2. No report, statement, notation on a plan, review, Certificate of Classification, document or information issued or given as part of the Services provided by the Society shall have any legal effect or implication other than a representation that, on the basis of the checks made by the Society, the Ship, structure, materials, equipment, machinery or any other item covered by such document or information meet the Rules. Any such document is issued solely for the use of the Society, its committees and clients or other duly authorised bodies and for no other purpose. Therefore, the Society cannot be held liable for any act made or document issued by other parties on the basis of the statements or information given by the Society. The validity, application, meaning and interpretation of a Certificate of Classification, or any other document or information issued by the Society in connection with its Services, is governed by the Rules of the Society, which is the sole subject entitled to make such interpretation. Any disagreement on technical matters between the Interested Party and the Surveyor in the carrying out of his functions shall be raised in writing as soon as possible with the Society, which will settle any divergence of opinion or dispute.

3.3. The classification of a Ship, or the issuance of a certificate or other document connected with classification or certificate on and in general with the performance of Services by the Society shall have the validity conferred upon it by the Rules of the Society at the time of the assignment of class or issuance of the certificate; in no case shall it amount to a statement or warranty of seaworthiness,

structural integrity, quality or fitness for a particular purpose or service of any Ship, structure, material, equipment or machinery inspected or tested by the Society.

- 3.4. Any document issued by the Society in relation to its activities reflects the condition of the Ship or the subject of certification or other activity at the time of the check.
- 3.5. The Rules, surveys and activities performed by the Society, reports, certificates and other documents issued by the Society are in no way intended to replace the duties and responsibilities of other parties such as Governments, designers, ship builders, manufacturers, repairers, suppliers, contractors or sub-contractors, Owners, operators, charterers, underwriters, sellers or intended buyers of a Ship or other product or system surveyed.

These documents and activities do not relieve such parties from any fulfilment, warranty, responsibility, duty or obligation (also of a contractual nature) expressed or implied or in any case incumbent on them, nor do they confer on such parties any right, claim or cause of action against the Society. With particular regard to the duties of the ship Owner, the Services undertaken by the Society do not relieve the Owner of his duty to ensure proper maintenance of the Ship and ensure seaworthiness at all times. Likewise, the Rules, surveys performed, reports, certificates and other documents issued by the Society are intended neither to guarantee the buyers of the Ship, its components or any other surveyed or certified item, nor to relieve the seller of the duties arising out of the law or the contract, regarding the quality, commercial value or characteristics of the item which is the subject of transaction.

In no case, therefore, shall the Society assume the obligations incumbent upon the above-mentioned parties, even when it is consulted in connection with matters not covered by its Rules or other documents.

In consideration of the above, the Interested Party undertakes to relieve and hold harmless the Society from any third party claim, as well as from any liability in relation to the latter concerning the Services rendered.

Insofar as they are not expressly provided for in these General Conditions, the duties and responsibilities of the Owner and Interested Parties with respect to the services rendered by the Society are described in the Rules applicable to the specific Service rendered.

Article 4

- 4.1. Any request for the Society's Services shall be submitted in writing and signed by or on behalf of the Interested Party. Such a request will be considered irrevocable as soon as received by the Society and shall entail acceptance by the applicant of all relevant requirements of the Rules, including these General Conditions. Upon acceptance of the written request by the Society, a contract between the Society and the Interested Party is entered into, which is regulated by the present General Conditions.

- 4.2. In consideration of the Services rendered by the Society, the Interested Party and the person requesting the service shall be jointly liable for the payment of the relevant fees, even if the service is not concluded for any cause not pertaining to the Society. In the latter case, the Society shall not be held liable for non-fulfilment or partial fulfilment of the Services requested. In the event of late payment, interest at the legal current rate increased by 1.5% may be demanded.

- 4.3. The contract for the classification of a Ship or for other Services may be terminated and any certificates revoked at the request of one of the parties, subject to at least 30 days' notice to be given in writing. Failure to pay, even in part, the fees due for Services carried out by the Society will entitle the Society to immediately terminate the contract and suspend the Services.

For every termination of the contract, the fees for the activities performed until the time of the termination shall be owed to the Society as well as the expenses incurred in view of activities already programmed; this is without prejudice to the right to compensation due to the Society as a consequence of the termination.

With particular reference to Ship classification and certification, unless decided otherwise by the Society, termination of the contract implies that the assignment of class to a Ship is withheld or, if already assigned, that it is suspended or withdrawn; any statutory certificates issued by the Society will be withdrawn in those cases where provided for by agreements between the Society and the flag State.

Article 5

- 5.1. In providing the Services, as well as other correlated information or advice, the Society, its Surveyors, servants or agents operate with due diligence for the proper execution of the activity. However, considering the nature of the activities performed (see art. 2.4), it is not possible to guarantee absolute accuracy, correctness and completeness of any information or advice supplied. Express and implied warranties are specifically disclaimed.

Therefore, except as provided for in paragraph 5.2 below, and also in the case of activities carried out by delegation of Governments, neither the Society nor any of its Surveyors will be liable for any loss, damage or expense of whatever nature sustained by any person, in tort or in contract, derived from carrying out the Services.

- 5.2. Notwithstanding the provisions in paragraph 5.1 above, should any user of the Society's Services prove that he has suffered a loss or damage due to any negligent act or omission of the Society, its Surveyors, servants or agents, then the Society will pay compensation to such person for his proved loss, up to, but not exceeding, five times the amount of the fees charged for the specific services, information or opinions from which the loss or damage derives or, if no fee has been charged, a maximum of AED5,000 (Arab Emirates Dirhams Five Thousand only). Where the fees charged are related to a number of Services, the amount of the fees will be apportioned for the purpose of the calculation of the maximum compensation, by reference to the estimated time involved in the performance of the Service from which the damage or loss derives. Any liability for indirect or consequential loss, damage or expense is specifically excluded. In any case, irrespective of the amount of the fees charged, the maximum damages payable by the Society will not be more than AED5,000,000 (Arab Emirates Dirhams Five Millions only). Payment of compensation under this paragraph will not entail any admission of responsibility and/or liability by the Society and will be made without prejudice to the disclaimer clause contained in paragraph 5.1 above.

- 5.3. Any claim for loss or damage of whatever nature by virtue of the provisions set forth herein shall be made to the Society in writing, within the shorter of the following periods: (i) THREE (3) MONTHS from the date on which the Services were performed, or (ii) THREE (3) MONTHS from the date on which the damage was discovered. Failure to comply with the above deadline will constitute an absolute bar to the pursuit of such a claim against the Society.

Article 6

- 6.1. These General Conditions shall be governed by and construed in accordance with United Arab Emirates (UAE) law, and any dispute arising from or in connection with the Rules or with the Services of the Society, including any issues concerning responsibility, liability or limitations of liability of the Society, shall be determined in accordance with UAE law. The courts of the Dubai International Financial Centre (DIFC) shall have exclusive jurisdiction in relation to any claim or dispute which may arise out of or in connection with the Rules or with the Services of the Society.

- 6.2. However,

- (i) In cases where neither the claim nor any counterclaim exceeds the sum of AED300,000 (Arab Emirates Dirhams Three Hundred Thousand) the dispute shall be referred to the jurisdiction of the DIFC Small Claims Tribunal; and
- (ii) for disputes concerning non-payment of the fees and/or expenses due to the Society for services, the Society shall have the

right to submit any claim to the jurisdiction of the Courts of the place where the registered or operating office of the Interested Party or of the applicant who requested the Service is located.

In the case of actions taken against the Society by a third party before a public Court, the Society shall also have the right to summon the Interested Party or the subject who requested the Service before that Court, in order to be relieved and held harmless according to art. 3.5 above.

Article 7

- 7.1.** All plans, specifications, documents and information provided by, issued by, or made known to the Society, in connection with the performance of its Services, will be treated as confidential and will not be made available to any other party other than the Owner without authorization of the Interested Party, except as provided for or required by any applicable international, European or domestic legislation, Charter or other IACS resolutions, or order from a competent authority. Information about the status and validity of class and statutory certificates, including transfers, changes, suspensions, withdrawals of class, recommendations/conditions of class, operating conditions or restrictions issued against classed ships and other related information, as may be required, may be published on the website or released by other means, without the prior consent of the Interested Party. Information about the status and validity of other certificates and statements may also be published on the website or released by other means, without the prior consent of the Interested Party.
- 7.2.** Notwithstanding the general duty of confidentiality owed by the Society to its clients in clause 7.1 above, the Society's clients hereby accept that the Society may participate in the IACS Early Warning System which requires each Classification Society to provide other involved Classification Societies with relevant technical information on serious hull structural and engineering systems failures, as defined in the IACS Early Warning System (but not including any drawings relating to the ship which may be the specific property of another party), to enable such useful information to be shared and used to facilitate the proper working of the IACS Early Warning System. The Society will provide its clients with written details of such information sent to the involved Classification Societies.
- 7.3.** In the event of transfer of class, addition of a second class or withdrawal from a double/dual class, the Interested Party undertakes to provide or to permit the Society to provide the other Classification Society with all building plans and drawings, certificates, documents and information relevant to the classed unit, including its history file, as the other Classification Society may require for the purpose of classification in compliance with the applicable legislation and relative IACS Procedure. It is the Owner's duty to ensure that, whenever required, the consent of the builder is obtained with regard to the provision of plans and drawings to the new Society, either by way of appropriate stipulation in the building contract or by other agreement.
- In the event that the ownership of the ship, product or system subject to certification is transferred to a new subject, the latter shall have the right to access all pertinent drawings, specifications, documents or information issued by the Society or which has come to the knowledge of the Society while carrying out its Services, even if related to a period prior to transfer of ownership.

Article 8

- 8.1.** Should any part of these General Conditions be declared invalid, this will not affect the validity of the remaining provisions.

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1 GENERAL

1.1 Purpose of the Rules Scope

1.1.1 These Rules illustrate the general criteria and the procedures adopted by Tasneef for the issue and maintenance of the certification of sailing rigs.

1.2 Assumptions and Interested Party's responsibility

1.2.1 Operation of rigs

The certification of a rig is based on the understanding that the rig is operated according to the Manufacturer's recommendations, in a proper manner by competent and qualified crew according to the environmental and operating criteria on which certification is based.

In particular, it will be assumed that the speed and course of the ship are adapted to the prevailing sea and weather conditions according to normal prudent seamanship.

1.2.2 Maintenance of rigs

Any document issued by Tasneef in relation to its interventions reflects the condition of the rig as found at the time and within the scope of the survey. It is the Interested Party's responsibility to ensure proper maintenance of the rig until the next survey required by the Rules.

1.2.3 Maintenance of the certification

It is the duty of the Interested Party to inform the Surveyor when he boards the ship of any events or circumstances affecting rig certification.

Any damage or defect which could invalidate the conditions for which the rig certification has been assigned is to be communicated to Tasneef without delay.

1.3 Field of application

1.3.1 General

These rules are applicable on a voluntary basis. Mandatory rig certification will be applied depending on specific Flag administration requirements.

Rig certification is assigned to a ship upon a survey, and / or the associated operations, which is held in order to verify whether it is eligible to be certified on the basis of the Tasneef Rules.

This may be achieved through:

- the completion of the new sailing rig building, during which a survey has been performed;
- a specific admission to initial survey, in cases where a rig is certified with another Society or is not certified at all.

When a rig is surveyed during construction, it is to comply with those requirements of these Rules which are in force and applicable depending on the certification scheme.

1.3.2 Type of ships

These Rules are generally applicable to yachts, racing yachts, passenger and training ships, of normal monohull type.

In these Rules, the term "yacht" indicates both "yacht" and "ship".

Yachts of multi-hull or of unusual design will be considered on a case-by-case basis.

1.3.3 Type of rig

These Rules are generally applicable to single or multiple masted Bermudian or gaff rigs.

Scantlings of square riggers are to be based on the requirements of the Tasneef Rules for the Masting and Rigging of Sailing ships.

1.3.4 Materials

These Rules generally apply to:

- composite materials (e.g. carbon fibre);
- standing rigging made of steel wire, rod, PBO, carbon fibre or other advanced fibre.

Where other materials of novel types are used, they are to be individually considered on the basis of equivalent strength and quality.

1.3.5 Type of navigation, operational limits

These Rules apply to yachts sailing in unrestricted navigation.

Rigs with design assumptions based on specific operational limitations will be considered on a case-by-case basis.

Any operational limitations (e.g. short range navigation) should be explicitly made known to the crew.

Yachts operating as short range navigation need not carry storm canvas.

All other yachts should either be provided with separate storm sails or have specific sails designated and constructed to act as storm canvas.

1.3.6 Novel features

Tasneef may consider the certification of sailing rigs based on or applying novel design principles or features, to which the Rules are not directly applicable, on the basis of experiments, calculations or other supporting information (CFD analysis, wind tunnel tests) to be submitted to Tasneef for appraisal. The specific limitations may then be indicated on the relevant rig certificate.

2 RIG CERTIFICATES

2.1 General

2.1.1 When applicable, mention of rig certification is made on the yacht’s class certificate.

Rig Additional Class notation is assigned to a yacht upon a survey, with the associated operations, which is held in order to verify whether it is eligible to be classed on the basis of the applicable Tasneef Rules.

✘ **RIG gold / platinum** additional class notation is assigned to a Yacht/Rig new building

Voluntary certification schemes can be established upon request such as selection and combination of different certification modules.

2.2 Rig certification schemes

2.2.1 General

A summary of the certification schemes is given in Table 1.

2.2.2 Silver Rig certification scheme

This certification scheme refers to the examination and acceptance, or approval, of the following aspects:

- a) Rig design approval
- b) Mast maker workshop approval
- c) Rig Booklet approval.

2.2.3 Gold Rig certification scheme

This certification scheme refers to the examination and acceptance, or approval, of the following aspects (in compliance with MCA “Large Commercial Yacht Code – Ly3” requirements):

- a) Rig design approval
- b) Mast maker workshop approval
- c) Rig stepping survey
- d) Sea trials survey
- e) Rig Booklet approval.

Further requirements may originate from the relevant Flag Administration.

2.2.4 Platinum Rig certification scheme

This certification scheme refers to the examination and acceptance, or approval, of the following aspects:

- a) Rig design approval
- b) Mast maker workshop approval
- c) Spars building surveys
- d) Rig fittings testing
- e) Rig stepping survey
- f) Sea trials survey
- g) Rig Booklet Approval
- h) Rig periodical surveys.

Table 1: Rig Certification Schemes

Module	Silver	Gold	Platinum
Rig design approval	x	x	x
Mast maker workshop approval	x	x	x
Spars survey			x
Rig fittings testing			x
Stepping survey		x	x
Sea trials		x	x
Periodical surveys			x
Rig Booklet approval	x	x	x
Note: The Platinum Rig Certification Scheme is recommended for passenger ships and training ships.			

2.3 Rig certification modules

2.3.1 General

Depending on the rig certification scheme (Silver, Gold, Platinum) chosen, the requirements of the following certification modules are to be complied with.

2.3.2 Rig design approval

A rig design certificate will be issued following the successful completion of the design review and approval.

The submitter must provide a detailed explanation of the methodology used in designing and sizing the mast and the rig components.

The designer is to demonstrate that all mast and rigging components are adequately sized for the intended route and service.

A detailed description is to be provided of the methodology used to determine the loads acting on the mast and rig. This description is to support decisions to use a particular mast and rig design and include engineering methods used to adequately size the mast/rig design.

2.3.3 Sparmaker workshop approval

The certification of the quality of construction of the spars is to be obtained through recognition of the manufacturer’s workshop.

All spars are to be built using working processes approved or accepted by Tasneef.

The mastmaker is to obtain the approval or acceptance of the methods and facilities used.

When the verification ascertains that the shipyard workshop has a system of production and quality control that satisfies the Tasneef requirements, so as to ensure a consistent level of quality, Tasneef may grant the mastmaker or shipyard special recognition of suitability for the construction of sailing rig spars.

2.3.4 Spars building surveys

When required by the yard or when deemed mandatory by Tasneef or the Platinum scheme has been adopted, the construction of spars will be carried out under supervision of a Tasneef surveyor.

2.3.5 Rig fittings testing

The following requirements are to be fulfilled under the Platinum scheme.

a) General

Testing of rig fittings may be requested on a voluntary basis by interested parties also when the Platinum Certification Scheme is not required. The manufacturer is to demonstrate the methodology used to determine working loads and ultimate loads of critical standing rigging fittings (e.g. turnbuckles, terminals, chainplates etc.).

The documentation is to include at least the following:

- design criteria
- material mechanical properties
- internal testing procedures
- internal quality control method
- internal NDT procedures.

In general, the testing operations and the inspections indicated in these Rules are to be carried out in the Manufacturer's workshop. However, the testing operations and acceptance tests to be carried out on board during and/or after installation are also considered for those products which are completed on board or for which tests are to be carried out in connection with the final trials of the on-board items.

In general, the following rig components are to be designed and tested in compliance with the requirements given in these Rules:

- Metal chainplates, turnbuckles and associated items (e.g. pins), terminals
- Hydraulic rams, when deemed necessary (e.g. backstay cylinders)
- Standing rigging wires, rods and cables.

b) Safe working load testing

When deemed necessary, safe working load of all standing rigging components should be proof tested in the presence of a Tasneef surveyor.

c) Breaking load testing

When deemed necessary, ultimate load of prototype fitting are to be tested in the presence of a Tasneef surveyor.

d) Fatigue testing

When deemed necessary at Tasneef judgement, taking into account the yacht size and working load, critical metal fittings are to be submitted to fatigue testing.

2.3.6 Rig stepping survey

Under the Gold and Platinum scheme, a physical survey on the rig stepping procedure is to be carried out in the presence of a Tasneef surveyor.

2.3.7 Sea trial survey

Under the Gold and Platinum scheme, a survey of the rig behaviour during sea trials is to be carried out in the presence of a Tasneef surveyor.

2.3.8 Rig Booklet manual approval

A Rig Booklet is a Manual, to be approved by Tasneef, which is to contain sufficient information to enable the Master and the crew to operate the yacht in compliance with applicable requirements.

The format of the Rig Booklet and the information included vary depending on the certification scheme (Silver, Gold, Platinum).

3 INSPECTIONS AND MAINTENANCE

3.1 General

3.1.1 Tasneef will verify, by attending tests and trials, that the scantlings and construction meet the Rule requirements in relation to the approved drawings. In general, all surveys outside the Manufacturer's facilities are to be carried out with the attendance of a Tasneef surveyor along with a mastmaker representative (service engineer, authorized professional rigger). Under the Platinum scheme, spars or rigging inspection reports issued by Manufacturer personnel are to be submitted to the Tasneef attending surveyor for his endorsement.

Under the Platinum scheme, the rig's component replacements are to be recorded in the approved rig booklet and undersigned by the class surveyor and the appointed rigger.

3.2 Initial surveys

3.2.1 General

The surveyor in charge is to be satisfied with the mastmaker's overall conditions of construction, capability and workmanship.

3.2.2 Construction survey

The requirements below apply to the Platinum scheme.

As part of his interventions during the rig's construction, the surveyor will:

- examine the construction methods and procedures covered by these Rule
- conduct an overall examination of the parts of the rig when required by these Rules
- check selected items covered by these Rules
- attend tests and trials where applicable and deemed necessary at Tasneef judgement.

3.2.3 Mast stepping

The requirements below apply to the Gold and Platinum scheme.

a) General

A physical survey of the rig stepping procedure and the rig behaviour during sea trials is to be carried out by or on Tasneef behalf.

After dock setup, no adjustment to the standing rigging or any of the fittings is to be contemplated without consulting a mastmaker representative.

The pre-tensioning of the rigging is to be specified by the designer, otherwise pre-tensioning is set to avoid slack cap shrouds with an appropriate reserve, when sailing at heeling angles at or below the SWA.

b) Dock tune setup report

The following information are to be provided:

- Mast rake
- Cylinder data:
 - Model
 - Capacity (T)
 - Area (cm²)

- N° cylinders (i.e. 2)
- Total cylinder area (cm²)
- Tuning sequence:
 - Step number of the jacking sequence
 - Jack load (including rig weight, for each step)
 - Required pressure, for each step (psi / bar)
 - Action, for each step (i.e.: tighten V1)
- Headstay tension at dock (with slack backstay, runners, inner forestay) (kg)
- Mast prebend:
 - Elevation above deck (m)
 - Prebend at dock (mm)
 - Offset from aft face to main halyard pulled down to BAS (mm)
 - Prebend Offset to main Hal.

3.2.4 Sea trials

The requirements of this item [3.2.4] apply to the Gold and Platinum scheme.

Sea trials are to be completed as for any new rig and rigging package; the rigging is to be gradually loaded up starting first with just the mainsail, then if the rigging and mast are performing correctly, moving onto jibs and finally wind sails.

A small number of moderately loud clicking sounds from the fittings through the rig and rigging may be expected as the rig gets loaded up for the first few times on each tack.

Once seated there will not be any further noticeable seating or creep of the rigging.

The rig tune is to be monitored as changes in tune can indicate the need for more detailed inspection.

3.3 Periodical surveys

3.3.1 Application

The requirements of this item [3.3] apply to the Platinum scheme.

3.3.2 General principles

The primary purpose of regular rigging inspection is to determine, with some level of confidence, component service life in order to prevent equipment failures and related marine casualties.

The condition of the rig is to be monitored in accordance with a Maintenance Manual and a planned maintenance schedule.

The schedule is to include, in particular, regular monitoring of all gear associated with safe work aloft and the bowsprit.

3.3.3 Survey schedule

The first rig class notation renewal survey is to be completed within 5 years from the date of the initial certification survey and thereafter 5 years from the credited date of the previous renewal survey.

However, consideration may be given by Tasneef to grant an extension for a maximum of three months after the limit date, in exceptional circumstances and provided that the yacht is attended and the attending surveyor so recommends.

In such cases, the next period of class will start from the limit date for the previous class renewal survey before the extension was granted.

For surveys completed within 3 months before the limit date of the class renewal survey, the next period of class will start from this limit date.

For surveys completed more than three months before the limit date, the period of class will start from the survey completion date.

A new period of class is assigned to the yacht after the satisfactory completion of the class renewal survey, and a new Certificate of Classification is issued for the new period of class.

The class renewal survey may be carried out during the fifteen months before the limit date of the class renewal survey.

3.3.4 Annual surveys

In the five-year period of class, five annual surveys are to be carried out.

The first to fourth annual surveys have a six-month window, i.e. from three months before to three months after each anniversary date, while the fifth annual survey has only a three-month window, i.e. from three months before to the fifth anniversary date.

Annual surveys are to include reviewing records and history of rig maintenance measures against the specifications provided by the maintenance manual. Full mast check is to be carried out by an experienced technician, approved by the mastmaker, from top to bottom.

Key areas are studied including sheaves, pins, spreader roots and tips, backstay, forestay and runner tangs.

This is to be performed on all craft after any major ocean voyage or at least once a year regardless of age or usage.

3.3.5 Intermediate surveys

Intermediate surveys are to be carried out within the window from three months before the second to three months after the third anniversary date, i.e. two and a half years after the delivery or anniversary date with a survey time window plus/minus nine months.

The intermediate survey is not applicable in the first period of class.

When the intermediate survey is applicable, it can replace the (second or third) annual survey if it is carried out in the window in which the second or third annual survey is due.

Along with a full mast check, the rig is to be jacked down to enable the surveyor to verify the lubrication of terminals such as cold heads.

A dock pre-tensioning check is to be undertaken as the mast is being jacked up, to ensure the rig tensions are correct and the spar is centered.

3.3.6 Renewal surveys

The renewal survey requires unstepping and dismantling the spar.

A thorough inspection of all mast components is to be undertaken, including composite rigging which is safe working load (SWL) tested.

The survey is to be followed by a sea trial.

3.4 Occasional surveys

3.4.1 General

An occasional survey is any survey which is not a periodical survey.

Occasional surveys are carried out at the time of, for example:

- damage or suspected damage
- repair or renewal work
- alterations or conversion
- postponement of surveys or recommendations

3.4.2 Damage and repair surveys

In the event of damage which affects or may affect the rig certification, the Owner is to apply to Tasneef for a survey. This application is to be made as soon as possible to enable the surveyor to ascertain the extent of the damage and necessary repairs, if any. All repairs to rig which may be required for a yacht to retain its class are to be to the satisfaction of the surveyor.

During repairs or maintenance work, the Owner is to ensure that any damage, defect or non-compliance with these Rules is reported to the surveyor during his survey.

Damage and partial or temporary repairs considered acceptable by the surveyor for a limited period of time will be the subject of an appropriate recommendation.

Damage or repairs required by the surveyor to be re-examined after a certain period of time will be the subject of an appropriate recommendation.

3.4.3 Alterations and repairs

Alterations or repairs of/to structures and arrangements affecting the rig certification are to be carried out with the agreement and to the satisfaction of the Tasneef Surveyor.

Where necessary, documentation is to be submitted to Tasneef and/or made available to the attending surveyor.

Materials and equipment used for alterations or repairs are generally to meet the requirements of these Rules for new rigs built under survey.

4 DOCUMENTATION TO BE SUBMITTED FOR APPROVAL

4.1 General

4.1.1 Documentation

Documentation relevant to the rig certification applied for is to be submitted for approval to Tasneef. The rig documentation to be approved is to consist of:

- a) Verification of scantlings
- b) Rig Booklet with the instructions for master and crew

If it is necessary for some of the key parameters to be mentioned in both parts, a consistency check is to be performed and verified by the Tasneef surveyor. Tasneef may also call for additional information according to the specific nature of the rig to be certified.

The documentation submitted to Tasneef is examined in relation to the certification scheme applied for in the request for certification.

A copy of the plans submitted will be returned duly stamped, with remarks related to compliance with these Rule requirements, should the need arise.

As a rule, modifications to the approved plans regarding items covered by certification are to be submitted.

It is the responsibility of the Interested Party to ascertain that the design data are correct, complete and compatible with the use of the yacht and rig.

Design calculations are to be provided, when called for, as supporting documents to the plans submitted. Design data and calculations are to be adequately referenced.

The plans submitted are to contain all necessary information to check compliance with the requirements of these Rules.

In the case of conflicting information, the documentation submitted will be considered in the following order of precedence: design data, plans, design calculations.

It is the responsibility of the Interested Party to ascertain that drawings used for the procurement, construction and other works are in accordance with the approved plans.

4.1.2 Alternative certification procedures

In addition, Tasneef may base its judgement on documentation such as certificates issued or accepted by another Classification Society, if any, and statutory certificates issued by the flag Administration or by a recognised organisation on its behalf; moreover, other documents and/or plans may be specifically required to be supplied in individual cases.

4.2 Rig geometry and properties

4.2.1 General

Calculations and drawings relevant to the sizing of the global mast tube are to be sent to Tasneef for approval.

The documentation is to include the geometrical data of the rig and the information needed to ascertain the forces applied on the structures.

4.2.2 Rig Geometry

Length, distance and angles relevant to the parts of spars, standing rigging and runners. Typical measures are listed below.

- a) Mast
 - height of mast above waterline
 - mast collar height from mast base
 - luff length (P)
 - rake
 - prebend
 - sections (width and depth)
 - crane length
- b) Boom
 - spar length
 - mainsail foot length
 - height from mast step
 - vang offset from gooseneck to attachment point
 - vang height from mast step to attachment point on mast
 - sheet offset distance from gooseneck to attachment point on boom
 - sheet offset
- c) Foretriangle
 - base of the foretriangle (J)
 - foretriangle height (I)
 - forestay length
 - maximum luff length
 - height of forestay pin above waterline
- d) Spinnaker
 - spinnaker hoist height above datum
 - spinnaker pole length (or bowsprit length)
 - spinnaker pole height above datum
 - spinnaker sheeting blocks distance from forestay
 - spinnaker sheeting blocks height above datum
 - spinnaker sheeting blocks offset from centreline
- e) Spreaders
 - height above mast datum
 - length
 - sweepback (m or degrees) angle of spreader
 - incline (m or degrees) angle of spreader end above horizon
 - cross sectional shape
 - height and width dimension at inner and outer ends
 - spreader shape (curve or straight)
- e) Shrouds
 - chainplates half width from boat centreline
 - chainplates pin height above waterline
 - offset distance back from the aft face of the mast at the deck datum point
 - attachment height of shrouds above mast step
- f) Headsail tracks
 - forward end distance from forestay pin

- aft end distance from forestay pin
 - forward end height above datum
 - aft end height above datum
 - forward end offset from centreline
 - aft end offset from centreline
- g) Runners and checkstays
- attachment heights of runners and checkstays on the mast above mast step
 - distance of chainplates from aft face of mast
- h) Sail plan
- mainsail shape e, including roach and reefing details
 - headsails shape
 - storm canvas details (storm trysail, storm jib) when applicable

4.2.3 Rig properties

- a) Geometry of mast sections for each panel (dimensions and geometrical properties)
- b) Spar material mechanical properties.
Density, Young's modulus, Poisson's ratio and breaking tension
- c) When applicable (composite masts), staking sequence of different plies of mast composite materials (ply orientation and properties)
- d) Cable properties.

4.2.4 Stability information

The following information is to be provided:

- a) Design righting moment
- b) Stability diagrams relevant to the various operating conditions (arrival and departure)
- c) Canting keel of water ballast tanks are to be accounted for
- d) Lightship data preliminarily assumed in the calculations. If they are inconsistent with the as built data, the verifications are to be performed again.

5 RIG BOOKLET

5.1 General

5.1.1 Data included in the rig booklet are to be consistent with the certification scheme adopted and with the yacht type under examination.

The rig booklet is to supply master and crew with the instructions to correctly utilize and maintain the rig.

5.1.2 Silver scheme

The user manual is to be supplied.

5.1.3 Gold scheme

The user manual is to be supplied.

5.1.4 Platinum scheme

In addition to the user manual, the operating manual is to be supplied.

The manual is to include, at least:

- a) Clear operating instructions for master and crew
- b) Certificates of components subject to periodical test
- c) Main yacht data
- d) Rig geometry
 - Key parameters, e.g.:
 - Reference design righting moments
 - Reference load case
 - Reference lightship data
- e) Bill of materials with the indication of suppliers and manufacturers, including at least:
 - mast tube
 - boom
 - standing rigging cables
 - inner forestay and runners cables
 - running rigging
 - furlers
 - mainsail track
 - sheaves and blocks
- f) Assembly sequence
- g) Mast
 - Spreaders attachment
 - Stepping
- h) Boom
 - Assembly sequence
 - Vang attachment
- i) Rigging
- j) Stepping sequence
- k) Tuning sequence
- l) Dock side tuning
- m) Tuning under sail

5.2 Maintenance details

5.2.1 General

In general, rig maintenance is to follow the manufacturer's instructions.

In the case of the Platinum scheme, the periodical surveys are to be carried out by personnel approved by mastmakers and attended by a Tasneef Surveyor.

5.2.2 Maintenance schedule

A maintenance manual issued by the mast manufacturer should be submitted to Tasneef for approval.

The frequency of surveys is to be:

- According to the approved rig booklet, for gold scheme
- According to Certification survey periodicity, for Platinum scheme

For the Platinum scheme, if rigs are subject to a planned overhauling scheme in accordance with the Manufacturer, the record book with all the works carried out is to be checked by the surveyor in order to verify compliance with the Manufacturer's Instructions.

The criticality of the components is to be ascertained through a risk assessment method and included in the maintenance manual.

5.3 Operating instructions

5.3.1 Load cases

At least the following are to be taken into account:

- Upwind/downwind
- through wind speed (TWS)
- apparent wind speed (AWS)
- Mainsail – full / reef
- Headsail
- Heel angle
- Sail reduction plan
- Safe heeling angle – operating limits

6 DESIGN PRINCIPLES

6.1 General

6.1.1 The rig design analysis is to enable the designer to assess the rig structural behaviour under the weight, tuning, sailing loads and inertia loads.

For this purpose, in general the methodology adopted by the designer has to include:

- a representation of the geometrical definition of sail shapes and rig components,
- a fluid-dynamic model and a finite element model of the sail plan,
- the aero-elastic solution for the sail plan,
- the rig finite element structural analysis.

The criteria for the structural model, load model and result analyses are reported in [6.2], [6.3] and [6.4], respectively.

Analyses based on different approaches may be considered by Tasneef, on a case by case basis, on the basis of a documented procedure that illustrates the load, and structural model adopted and the results obtained.

6.2 Structural models

6.2.1 The rig is generally modelled with cables, beam-column elements and rigid constraints at the connection with the yacht structures.

The structural model is to be such to as to take into account geometric non linearities and the no-compression behaviour of the cables. In some cases.

In some case, when deemed necessary by the Society on the basis of the results obtained and the mast characteristics, a non-linear buckling analysis may be required to be carried out.

6.3 Load model

6.3.1 Loads to be considered

The loads to be considered in the rig analysis are:

- the weight loads,
- the tuning loads,
- the rig sailing loads,
- the inertia loads.

These loads are to be combined in their most severe realistic combinations.

6.3.2 Rig sailing loads

In general, rig sailing loads are to be calculated by means of Computational Fluid (CFD) techniques, integrated with Finite Element structural models.

6.3.3 Inertia loads

The inertia loads to be considered are those originated on the various masses by the vertical accelerations of the yacht due to impact on waves.

The longitudinal components of the accelerations due to pitch are also to be considered. The centre of rotation of the pitch motion is considered to be at the yacht mid length at the waterline height.

The mass of each structural element may be considered evenly distributed along its length.

In general, the inertia loads are to be calculated on the basis of the above assumptions, for a vertical acceleration at the cockpit not less than $9,81 \text{ m/s}^2$.

As an alternative, the inertia loads may be calculated on the basis of a seakeeping analysis, which accounts for the specific characteristics of the yacht and the intended operational conditions. In this case, the details of the analysis are to be submitted for approval.

6.4 Checking criteria

6.4.1 It is to be checked that, for each rig element, the ratio between its ultimate stress and the stresses acting in this element is not less than 2,5.

For racing yachts, lower values, down to 2,0, may be accepted by Tasneef, on a case by case basis, when:

- the design analysis is fully in accordance with the criteria in [6.2] and [6.3],
- ad-hoc strength checks are carried out by the Designer, and deemed acceptable by Tasneef, for all the rig system components.