

Rules for the Qualification and Certification of Technicians and Process Managers working in Factories Building Yachts or other Products made in Composite Material having a Thermosetting Matrix

Effective from 1 January 2016

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GENERAL TERMS AND CONDITIONS
OF EMIRATES CLASSIFICATION SOCIETY – L.L.C – O.P.C (TASNEEF)
EFFECTIVE AS OF 1 APRIL 2025

DEFINITIONS

Administration	means the government of the state whose flag the Ship is entitled to fly or under whose authority the Ship is authorised to operate in the specific case.
Client	means the interested party and any other party who requires the Services.
Certificate of Classification	means a certificate of classification, issued by a Society and the certificate confirms that the vessel's structure, machinery, and equipment meet the society's specific technical rules and regulations.
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.
Register of Ships	means a register book, also known as a Register of Ships, is a comprehensive record of vessels that are classified by a society.
Rules	means the documents below issued by the Society: a. Rules for the classification of Ships or other special units. b. Complementary rules containing the requirements for certification of products, plants, systems and other or containing the requirements for the assignment of additional class notations. c. Rules for the application of statutory rules, containing the rules to perform the duties delegated by administrations. d. Guides to carry out particular activities connected with Services. e. Any other technical document, as for example rule variations or interpretations.

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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	means Emirates Classification Society LLC OPC and/or its affiliated entities providing the Services.
Surveyor	means technical staff acting on behalf of the society in performing the Services.
UAE	means United Arab Emirates.

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.
- 1.2 The Society (a) sets forth and develops Rules; (b) publishes the Register of Ships¹; and (c) issues certificates, statements and reports based on its survey activities.
- 1.3 The Society also takes part in the implementation of national and international rules and standards as delegated by various Governments.
- 1.4 The Society carries out technical assistance activities on request and provides special services outside the scope of classification, which is 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, though committed, also through its research and development services, to continuous updating, does not guarantee they 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.tasneefmaritime.ae
- 2.3 The Society exercises due care and skill:
 - (a) in the selection of its Surveyors; and
 - (b) 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 each component of the Ship or of the items subject to certification. The surveys and checks made by the Society, either on board Ships or with remote techniques, do not necessarily require the constant and continuous presence of the Surveyor. The Society may also commission laboratory testing, underwater inspection and other checks to qualified service suppliers, who will carry out these duties under their responsibility. 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, reflect the discretionary 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).
- 3.2 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.
- 3.3 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, are governed by the Rules of the Society, whom is the sole subject entitled to make such authentic 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.
- 3.4 The classification of a Ship, or the issuance of a certificate or other document connected with classification or certification 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.
- 3.5 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.
- 3.6 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 including, without limitation, 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.

- 3.7 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 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.
- 3.8 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.
- 3.9 In consideration of the above, and within the limits of liability under Article 5 below, 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, where these are attributable to the Interested Party.
- 3.10 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 and costs, 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 non-payment of the invoice within the contractually agreed terms, the Society reserves the right to request, in addition to the full payment of the principal amount due and without the need for further formal notice, also:
- (a) Late payment interest at a rate of 5% per annum, calculated from the due date of the invoice until full payment is received, in accordance with the applicable laws in the United Arab Emirates or the country from where the invoice is issued. Any applicable VAT, taxes, or statutory levies shall be borne by the Client as per the laws

of the respective jurisdiction;

- (b) full reimbursement of any costs incurred for debt recovery, including, but not limited to, legal fees, administrative expenses, and the costs of any extrajudicial actions; and
- (c) any additional amount due as compensation for damages suffered as a result of the delay or non-compliance, where documented.

- 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.
- 4.4 The Society may withhold, suspend or withdraw any certificate, report or service in the event of non-payment of fees due to any member of the Society by the Client in relation to the entire business relationship between any member of the Society and the Client or by any other companies belonging to the same group as the Client. This also applies when the obligation to pay rests with a builder or with the Ship's previous Owner.
- 4.5 For every case of termination or suspension of the contract, the fees for the activities performed until the time of the termination or of the suspension 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 or of the suspension.
- 4.6 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 Article 2), it is not possible to guarantee absolute accuracy, correctness and completeness of any information or advice supplied. Express and implied warranties are specifically disclaimed.
- 5.2 Therefore, subject to what provided for in Article 5.3 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.
- 5.3 Notwithstanding the provisions in Article 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).
- 5.4 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 AED 300,000 (Three Hundred Thousand Dirhams). Payment of compensation under this Article 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 Article 5.

- 5.5 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: THREE MONTHS from the date on which the Services were performed or THREE 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 Any dispute, controversy, or claim arising out of or relating to these Rules, the Services of the Society, or the interpretation, breach, or termination thereof, shall first be referred to the parties' senior management for amicable resolution within thirty (30) days of written notice by either party.
- 6.2 If the dispute is not resolved amicably under Article 6.1, it shall be exclusively governed by and construed in accordance with the laws of the Emirate of Abu Dhabi and the applicable federal laws of the United Arab Emirates. The courts of Abu Dhabi shall have exclusive jurisdiction to settle any such dispute.

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 authorisation of the Interested Party, except as provided for or required by any applicable legislation from a competent authority. Information about the status and validity of class and statutory certificates, including transfers, changes, suspensions, withdrawals of class, 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.
- 7.2 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.
- 7.3 Notwithstanding the general duty of confidentiality owed by the Society to its clients in Article 7.1 above, the Society's clients hereby accept that the Society will 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.
- 7.4 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.

- 7.5 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 have 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 The Society shall not be obliged to perform any obligation towards the Client (including, without limitation, obligation to (a) perform, deliver, accept, sell, purchase, pay or receive money to, from or through a person or entity, or (b) engage in any other act) if this would be in violation of, inconsistent with or expose the Society to punitive measures under any United Nations resolutions and/or under any laws, regulations, decrees, ordinances, orders, demands, requests, rules or requirements of EU, United Kingdom, and/or United States of America and which relate to foreign trade controls, export controls, embargoes or international boycotts (applying, without limitation, to the financing, payment, insurance, transportation, delivery or storage of product and/or services) hereinafter referred to as "Trade Sanctions".
- 8.2 Recurring the above circumstances during the performance of the contract, the Society shall be entitled at its sole and absolute discretion:
- (a) to immediately suspend payment or performance of the Services which are the object of the contract until such;
 - (b) time as the Trading Sanctions are in force;
 - (c) to a full disengagement from the obligation affected by the Trading Sanctions, in the event that the inability to fulfill the said obligation persists until the term provided for the fulfilment hereunder, provided that where the relevant obligation relates to payments for activities and/or Services which have already been delivered, the affected payment obligation shall remain only suspended until such time as the Trading Sanctions no longer apply to the payment ; and/or
 - (d) to terminate the contract, without prejudice of the Society's rights pursuant to Article 4.

ARTICLE 9

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

ARTICLE 10

When the Society provides its Services to a consumer - i.e. a natural person who does not act within the scope of his business or professional activity - the following provisions do not apply Article 3 (as far as the Society is solely entitled to the authentic interpretation of the Rules); Article 4, (as far as the payment of the fees is also due for Services not

concluded due to causes not attributable to the Interested Party); Article 5 (as far as the exclusion of liability is concerned), and Article 6 (as far as the jurisdiction of a Board of Arbitrators based in Abu Dhabi is concerned).

ARTICLE 11

- 11.1 The Society and the Interested Party shall promote safety, protect human health and environment and create safe working conditions for their personnel.
- 11.2 The Interested Party shall guarantee that the working environment in which the Society's Surveyor will be required to work is adequate, safe and in all respect compliant with the applicable legislation and Rules and shall adopt all necessary measures to mitigate and/or control any relevant risk.
- 11.3 Furthermore, in accordance with the applicable legislation and Rules, the Interested Party shall provide the Society with complete and detailed information relevant to any actual or potential specific risk existing in the work areas where the Surveyor will be required to operate and relevant to the performance of the Services as well as with any specific safety measure that the Society's Surveyor is requested to comply with.
- 11.4 The Society reserves not to commence and/or to suspend the Services and/or to terminate the contract, claiming compensation for any damage occurred, if it considers that the safety requirements listed in this Article are not satisfactorily met.

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1 GENERAL AND FIELD OF APPLICATION

1.1 Purpose and application

1.1.1

These Rules set out the procedures applied by Tasneef for technicians and process managers working in factories building yachts or other products made in composite materials having a thermosetting matrix, as well as the procedures to be followed by Organisations in order to apply for, obtain and maintain such certification.

1.1.2

The certification issued by Tasneef refers to the personnel indicated on the Certificate of Qualification as operating within the applicant Organisation, where "Organisation" is intended to mean a public or private firm, body or association, which may or may not be legally incorporated, with its own function and administration or, alternatively, an individual. Where Organisations have several operational units, each such operational unit can be considered an organisation.

2 SCOPE OF THE QUALIFICATION TRAINING

2.1

Tasneef may request type approval for other materials, equipment, systems or products required by the applicable provisions for ships or installations of special types. The technicians who apply for qualification are to demonstrate the following capabilities:

- a) be acquainted with the lamination plan, bill of materials and working instructions,
- b) be able to produce (internal) standard laminates and secondary bonding and to use machines and equipment required by the fabrication techniques in use in the shipyard and the appropriate working instructions and procedures,
- c) be able to recognise and eliminate the main typical in-process detectable defects during lamination and assembling operations.

2.2

The process managers who apply for qualification are to demonstrate the following capabilities:

- a) be able to produce (internal) standard laminates and secondary bonding and to recognise the main typical lamination defects.
- b) be able to control the fabrication process in order to avoid problems in the laminates and the structures and to assure the highest quality of the product during its life.
- c) know in detail the material characteristics and their behaviours in applications related to the fabrication techniques in use in the shipyard.

- d) be responsible for the issue of the working instructions and procedures and for the standardisation and organisation of manufacturing.

Depending on the size and the organisation of the Manufacturer, an internal laboratory technician will support him from the point of view of Quality and Process Control (measurements, organising and interpretation of materials and process data and material and part inspection) and Raw Material selection.

3 TERMS AND DEFINITIONS

3.1 General

For the purposes of this Specification, the terms and definitions given in the following apply.

3.2 Technician for Lamination

A professional with industrial experience who is capable, trained and qualified to produce an internal standard composite laminate. According to the level of competence the technician may be qualified to fabricate basic laminate and secondary bonding.

3.3 Process Manager

A professional with industrial experience who is qualified for the organisation and management of a composite laminate manufacturing process.

3.4 Examiner

A designated representative of Tasneef, who has sufficient technical background and practical experience to manage, supervise and evaluate the examination tests.

3.5 Tutor

A professional with industrial experience qualified for teaching and examination activity on the training courses foreseen in these Rules.

3.6 Applicant

Person undergoing the examination.

3.7 Base composite

The laminate plating without stiffeners.

3.8 Reinforcements

Glass, aramidic or carbon fibres, inside the composite, that are applied in various forms (Mats, Woven, Uniaxial, Multiaxial, etc.).

3.9 Resins

Thermosetting polymers that constitute the matrix of the composite, which surround and support the reinforcement materials by maintaining their relative positions, transfer loads among fibres and layers, protect the laminate and assure watertightness.

3.10 Layer

Laminate or plies fabricated with reinforcements and resins, stacked up in a predetermined arrangement to make the composite.

3.11 Secondary bonding

The activity to connect the base laminate to a stiffener or a structural part using a lamination process (taping).

3.12 Standard laminate

Defined in Annex 1, Sec 8 of the Rules for the Certification of the Production Quality Control System of Manufacturers of Yachts or other products built in Composite Material.

4 RANGE OF QUALIFICATION

4.1 General

The qualification is related to the composite production system, phases and equipment knowledge for which the applicant requires to be qualified; such parameters define the level of competence the applicant must achieve.

Levels of competence as per [4.2] are to be considered in relation to the characteristics of the base composite laminate, and to the production system.

4.2 Level of competence

4.2.1

Following levels of competence are to be considered in relation to the characteristics of the base composite laminate, and to the production system.

TECHNICIANS:

- 1 1-a HAND LAY-UP LAMINATION_monolithic
1-b HAND LAY-UP LAMINATION_sandwich
- 2 HAND LAY-UP LAMINATION
assembling/secondary bonding
- 3 HAND LAY-UP LAMINATION_machines and
equipment
- 4 4-a CLOSED MOULDING_vacuum bagging
4-b CLOSED MOULDING_vacuum infusion

PROCESS MANAGERS:

- 5 5-a Hand Lay-up PROCESS MANAGEMENT
5-b Vacuum Infusion PROCESS MANAGEMENT

5 REQUIREMENTS FOR ADMISSION TO THE EXAMINATION

5.1

To be admitted to the exam, the candidate must possess the minimum experience and training qualifications stated below.

5.2

Candidates must prove that they have spent at least the following period working uninterruptedly in the specific field of laminating composite:

- Six months - levels 1, 2, 3 and 4
- One year - level 5

A statement certifying the above minimum level of experience issued by the Organisation where the candidate has been employed is to be attached to the Certification Request (Annex A).

5.3

5.3.1

The theoretical education is based on a training course: the teaching hours and the minimum content of the theoretical education are given in Annex D as a function of the competence level.

5.3.2

The practical education also consists of a training course: the teaching hours and the minimum content of the practical education are given in Annex E as a function of the competence level.

5.3.3

As an alternative to the Tasneef theoretical and practical course, the candidate may provide proof that he has satisfactorily completed an alternative Tasneef recognised theoretical and practical training course. To this end a copy of the relevant certification is to be attached to the Certification Request.

5.3.4

In the case of [5.3.3] the candidate is to take the theoretical and practical examinations as stated respectively in [7.2] and [7.3].

6 CERTIFICATION PROCESS

6.1

Organisations wishing to obtain the above certification for their personnel are to fax, post or email a request to this effect containing at least the information listed in the form in Annex A and a Record of Competence for each person applying for certification.

6.2

On the basis of the information submitted, following a preliminary examination to check that there are no omissions, Tasneef will prepare a quotation and provide course information, which will be sent together with a copy of these Rules.

6.3

Upon receipt of acceptance of the foregoing proposal, Tasneef will send the Organisation written confirmation of acceptance of the request. The request submitted by the Organisation and its acceptance by Tasneef formalises the contract for intervention by Tasneef in accordance with these Rules.

At its discretion, Tasneef may also require the submission of other documents for examination, in support of the information already submitted, where this is deemed important for the purpose of the certificate concerned.

Tasneef will notify the Organization of the names of the commission members appointed to examine and qualify the Technicians; the Organization may object to such appointments provided that it submits justified reasons for this.

7 EXAMINATION

7.1 General

The qualification exam comprises:

- Theoretical Examination;
- Practical Examination.

The examination in general, and in particular the practical examination, is to be carried out at the Organisation's facilities. This location is to be agreed prior to commencing the examination.

7.2 Theoretical Examination

The examination consists of a set of questions with multiple choice answers. The questions cover all the subjects given in Annex D.

The time to complete the test is to be communicated by the commission on the basis of the level of competence to be assigned.

7.3 Practical Examination

Candidates will perform the test on the laminates relevant to the requested qualification range by fabricating one or more internal standard samples as set out by the commission.

Commission members make provision for identification by means of permanent marking of the samples for subsequent destructive tests.

The practical examination is divided into three phases:

- Laminate Execution
- Final Inspections
- Laboratory Tests.

Each phase will be evaluated separately by assigning a rating score defined in the relevant examination checklist.

At the end the commission will assign a global rating score for the practical examination by calculating a weighted average of the phase rating scores.

The weight for each examination phase is given in Tab 1.

Table 1

Phase	Weight
Laminate Execution	20%
Final Inspections	30%
Laboratory Tests	50%

During the lamination execution (*first phase*), the commission will evaluate the correct building of the laminate on the basis of the following aspects, depending on the required level of competence as per [4.2]:

- the temperatures of the materials
- the conditions of the equipment and calibration of the machines (where applicable)
- the mould conditions and quality before the application of the release agent
- the mould conditions and quality before the application of the gel coat
- the mould temperature before the application of the gel coat
- the type and amount of catalyst or hardener
- the thickness of the gel coat and the uniformity of its application

- the defects of the cured gel coat before overlaminating
- the uniformity of impregnation of reinforcements
- the volume/weight of resin for impregnation
- the weight of applied reinforcements
- the surface hardness of the skin coat before overlaminating
- the defects on the cured skin coat before overlaminating
- the surface hardness of the laminate before assembling
- the defects on the cured laminate before overlaminating
- the defects on the cured structures and joints before demoulding
- the surface hardness of the laminate before demoulding
- the total weight of the part after demoulding
- the thickness of the laminate after demoulding.

For each of the above checks, the commission will assign a score ranging from 1 to 4.

After curing and demoulding, the laminate will be subjected to a final inspection (*second phase*) having the scope of detecting any eventual defect that can be discovered after demoulding.

Finally, the sample will be tested in a laboratory (*third phase*) in order to evaluate its chemical/physical characteristics and performance, in comparison with the approved internal standard laminates.

The time for the execution of the practical examination depends on the number of samples to be manufactured and on the relevant procedure to be applied. The time will be agreed with the examination commission on a case-by-case basis.

The material for the practical test is to be supplied directly by the Organisation.

7.4 Examination of the results

7.4.1

The Commission will examine the final results of theoretical and practical examinations according to Tab 2.

Table 2

	min	max	Acceptance criteria
Theoretical examination	0	100%	≥ 60%
Practical examination	0	100%	≥ 70%

7.4.2

Upon completion of the examinations, the examination commission meets to draw up the final examination report, which must be signed by all the commission members.

7.4.3

The final report, all the examination reports and all the documents produced by the candidates are to be sent to Tasneef for approval and issue of the proposed certificates.

7.4.4

In the event of unsatisfactory results, Tasneef will notify the Organisation.

Candidates who do not pass the exam must wait for at least thirty days before applying again.

If they have been disqualified for dishonesty, candidates must wait for at least one year.

7.4.5

Candidates who have passed the theoretical examination but failed the practical part are allowed to repeat the latter without having to repeat the former, provided this is no later than six months after the date of the first exam.

After the six-month period, any candidate who resits the examination must take both tests again.

7.4.6

Destructive testing, to be carried out with a Tasneef Surveyor in attendance, may be performed on the Organisation's own premises if they have the necessary test equipment or at an independent test laboratory. In the latter case, it will be the responsibility of the requesting Organisation to send the samples to the test laboratory. Also, if the independent laboratory is accredited in accordance with the UNI CEI EN ISO/IEC 17025 Standard for the specific sector relevant to that product, Tasneef may or may not attend the destructive tests.

The test report will be sent to Tasneef for further examinations.

7.5. Issue of the certificates

Upon satisfactory review of the final report, the examination reports and the documents produced by the candidates, Tasneef issues the certificates (see Annexes B and C).

A certificate will be issued for each applicant examined stating that s/he has been approved for qualification according to the Tasneef "Rules for the Qualification and Certification of

Technicians and Process Managers working in factories building yachts or other products made in composite material having a thermosetting matrix

7.6

Requirement for Tasneef qualifications

The candidates to be qualified as "tutors" are to comply with the conditions given in [7.6.2] to [7.6.5].

7.6.2

They must prove that they have spent at least five years in the specific field for which they require to be qualified.

7.6.3

They are to be qualified, according to these Rules, for a level of competence given in [4.2] not lower than the one for which the tutor's qualification is required. Tasneef may evaluate, case-by-case, the possibility of admitting a candidate directly to the theoretical and practical examination, depending on the curriculum vitae and past experience of that candidate.

7.6.4

Applicants who possess the requirements given in [7.6.1] and [7.6.2] are to go through the tutoring activity for the complete theoretical and practical sessions in a training course under the supervision of a Tasneef exclusive Surveyor who is qualified for the said activity.

7.6.5

Subject to the satisfactory results of the above qualification steps, Tasneef will issue a Certificate stating that the candidate has been approved as a Tasneef tutor, qualified for the tutor's activities for a specific certification scheme foreseen in these Rules. The validity of the Tutor's Certificate is one year, and will be connected to a consulting contract.

8 VALIDITY OF CERTIFICATES FOR TECHNICIANS AND PROCESS MANAGERS

8.1

The certificates issued by Tasneef are valid for five years, unless they are withdrawn. Only Tasneef may withdraw a certificate.

8.2

The validity of the certificates during the above period is subject to intermediate validation by Tasneef (during the third year of validity), which will assess the following conditions:

- the correct professional behaviour of qualified personnel;
- the continuity of professional laminating activities during the two-year period;
- the professional training and updating activities attended by the Technician during the two-year period;
- the continued physical fitness of the Technician to perform the specific activities.

9 RENEWAL OF CERTIFICATES FOR TECHNICIANS AND PROCESS MANAGERS

9.1

At the end of the five-year period, the certificate expires and the Technician must sit a special renewal exam for the issue of a new certificate.

9.2

The Certificate of qualification may be renewed by carrying out a practical examination for the same composite and laminating system stated on the Certificate, according to [7.3].

The practical examination for the renewal of the Certificate is to be completed in the six-month period before the expiry date of the Certificate.

In the case of expiry of the Certificate, the Technician may be requalified following the steps laid down in [7].

Applications to renew certification are to be presented to Tasneef as indicated in [6.1].

9.3

In addition, for process manager certificate renewal, the management activity of the last two years will be assessed by the commission.

To this end, appropriate documentation is to be supplied by the Organisation to the commission.

If, after examination of the above data, the commission deems the management activity inappropriate, the candidate will be required to undertake a theoretical and practical tutorial period focusing on the matters raised.

The content of the tutorial period will be established by the commission.

10 WITHDRAWAL OF CERTIFICATION FOR TECHNICIANS AND PROCESS MANAGERS

10.1

Tasneef may monitor or supervise the work of qualified staff within the sphere of its institutional activities, such as:

- surveillance for the quality production control scheme as per [3.1.11];
- surveillance of sites and production units;
- certification or periodical audits of company quality systems according to UNI EN ISO 9001:2000 standards;
- certification or periodical audits of products subject to statutory constraints (e.g. EC Directives);
- third-party industrial certification activities.

10.2

Within the scope for these invites, Tasneef may withdraw the certificates of qualified Technicians if: – it finds that the conditions indicated in [9] are not satisfied;
– objective documented evidence shows that qualified staff are unable to guarantee the professional skills demonstrated during their qualifying exam.

10.3

Notice of withdrawal of a certificate will be sent by registered letter to the Organisation and will cause the person in question to be deleted from the list indicated in [12].

10.4

Personnel whose certification has been withdrawn must return the original certificate to Tasneef. Personnel who, following withdrawal, intend to apply for certification again must present a new application and repeat the entire procedure.

10.5

Certified personnel may no longer use the certificate or copies thereof if certification has been withdrawn.

11 LIST OF TECHNICIANS AND PROCESS MANAGERS CERTIFIED BY Tasneef

11.1

Tasneef publishes and regularly updates a list of the personnel who have obtained certification and have explicitly agreed to have their personal data processed. The list contains:

- the official name of the Organisation;
- the number of qualified Technicians;
- Reference to the Rules for Qualification and Certification of Technicians and Process Managers working in factories building yachts and other products made in composite material having thermosetting matrix;
- the date of expiry of the Certificate.

Where the Organisation is an individual who has given consent to the use of her/his personal details, in lieu of the company name the list will include this person's name and address.

The above list can be found on the Tasneef website:

www.Tasneef.org

12 TRANSFER OF CERTIFICATES FOR TECHNICIANS AND PROCESS MANAGERS

Tasneef may transfer a Certificate bearing the name of a particular Technician to an Organisation other than that which applied for and obtained the certification of the Technician in question, provided that written authorisation to this effect is submitted to Tasneef by the original Organisation.

Annex A: Certification Request Form (Standard Application Form)

Company Data

Company Name:
Address:
Reference Person:
Phone number: fax:
VAT No.:
e-mail:

We request registration of the following people on the training course for certification according to the **"Tasneef Rules for the Qualification and Certification of Technicians and Process Managers working in factories building yachts and other products made in composite materials having a thermosetting matrix"**:

First Name: Last Name:
Place of Birth: Date of Birth:

First Name: Last Name:
Place of Birth: Date of Birth:

First Name: Last Name:
Place of Birth: Date of Birth:

We request training and certification for the following:

LEVEL OF COMPETENCE (tick the appropriate box)

1-a HAND LAY-UP LAMINATION_monolithic ☐

1-b HAND LAY-UP LAMINATION_sandwich ☐

2 HAND LAY-UP LAMINATION_assembling/secondary bonding ☐

3 HAND LAY-UP LAMINATION_machines and equipment ☐

4-a CLOSED MOULDING_vacuum bagging ☐

4-b CLOSED MOULDING_vacuum infusion ☐

5-a Hand Lay-up PROCESS MANAGEMENT ☐

5-b Vacuum Infusion PROCESS MANAGEMENT ☐

Place and date

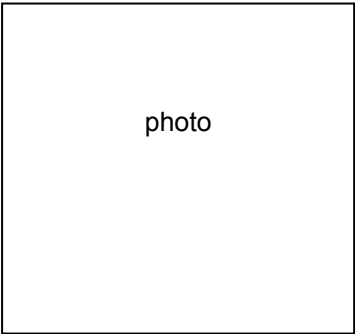
Organisation's Signature and Stamp

Annex A: Certification Request Form (Standard Application Form)

Attachments (if any):

Annex B: Marine Base Composite Technician’s Certificate (Standard Form)

Certificate Number



Technician’s Name:
Identification:
Method of identification: Photograph
Date and place of birth:
Employer:

This is to certify that the above-mentioned person has been trained, examined and qualified according to:

Tasneef Rules for the Qualification and Certification of Technicians and Process Managers working in factories building yachts and other products made in composite materials having a thermosetting matrix

LEVEL OF COMPETENCE (tick the appropriate box)

- | | | |
|-----|---|--------------------------|
| 1-a | HAND LAY-UP LAMINATION_monolithic | ☐ |
| 1-b | HAND LAY-UP LAMINATION_sandwich | ☐ |
| 2 | HAND LAY-UP LAMINATION_assembling/secondary bonding | ☐ |
| 3 | HAND LAY-UP LAMINATION_machines and equipment | ☐ |
| 4-a | CLOSED MOULDING_vacuum bagging | ☐ |
| 4-b | CLOSED MOULDING_vacuum infusion | ☐ |

Place and date

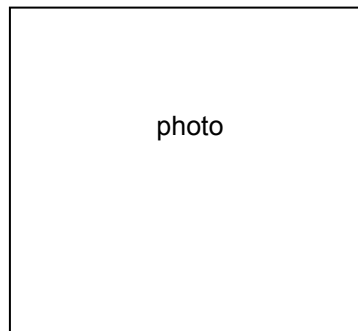
This Certificate is valid until

Intermediate Validation

Signature

Annex C: Marine Base Composite Process Manager's Certificate (Standard Form)

Certificate Number



Process Manager's Name:

Identification:

Method of identification: Photograph

Date and place of birth:

Employer:

This is to certify that the above-mentioned person has been trained, examined and qualified according to:

Tasneef Rules for the Qualification and Certification of Technicians and Process Managers working in factories building yachts and other products made in composite materials having a thermosetting matrix

LEVEL OF COMPETENCE (tick the appropriate box)

5-a Hand Lay-up PROCESS MANAGEMENT ☐

5-b Vacuum Infusion PROCESS MANAGEMENT ☐

Place and date

This Certificate is valid until

Intermediate Validation

Signature

Annex D: Minimum content of the theoretical education

Minimum content of the theoretical education (See Tables 1 and 2 for more details).

level 1-a HAND LAY-UP LAMINATOR_monolithic and:

level 1-b HAND LAY-UP LAMINATOR_sandwich

6- to 7-hour basic course (6 hours for 1-a sub-level, 7 hours for both sub-levels) covering aspects on raw material characteristics, handling and application, use of working instructions and in-process checks and tests during the fabrication of monolithic and/or sandwich internal standard laminates via hand lay-up and/or spray up techniques; learning of the main lamination defects, their detection and removal.

level 2 HAND LAY-UP LAMINATOR_assembling/secondary bonding

8-hour course, 7-hour basic “level 1” + 1 hour specifically dedicated to the preparation of composite surfaces and the assembling of parts by lamination.

level 3 HAND LAY-UP LAMINATION_machines and equipment

10-hours course, 8 hours level 2 + 2 hours specifically dedicated to the use and maintenance of machines and equipment.

level 4a CLOSED MOULDING_vacuum bagging

15-hour course, 13 hours specifically dedicated to the basic vacuum bagging techniques + 2 hours specifically dedicated to vacuum bagging lamination defects, their detection and repair.

level 4b CLOSED MOULDING_vacuum infusion

22-hour course, 15 hours level 4-a + 5 hours specifically dedicated to the basic vacuum infusion techniques + 2 hours specifically dedicated to vacuum infusion lamination defects, their detection and repair.

level 5-a Hand Lay-up PROCESS MANAGEMENT

31-hour course, 17 hours level 4-a+ 14 hours specifically dedicated to process management: process definition and control, testing of materials and inspection of composite parts, evaluation and approval of new raw materials and internal standard laminates, advance laminates defect inspection (ND analysis) and repair, documentation for quality and process management.

level 5-b Vacuum Infusion PROCESS MANAGEMENT

38-hour course, 24 hours level 4-b+ 14 hours specifically dedicated to process management: process definition and control, testing of materials and inspection of composite parts, evaluation and approval of new raw materials and internal standard laminates, advance laminates defect inspection (ND analysis) and repair, documentation for quality and process management.

Table 1

THEORETICAL CONTENTS for levels 1-a, 1-b, 2, 3	COMPETENCE LEVELS				
	1-a	1-b	2	3	hours
Basic Materials raw material characteristics, handling and application	x	x	x	x	2
Standard Monolithic Laminates working instructions and in-process checks and tests	x	x	x	x	1
Standard Sandwich Laminates working instructions and in-process checks and tests		x	x	x	1
Basic Lamination Techniques Hand Lay-Up and Spray Up	x	x	x	x	1
Assembling surface preparation and secondary bonding			x	x	1
Basic laminate defect analysis-remedy	x	x	x	x	2
Basic Machines and Equipment for gel coats, resins, bonders characteristics, use and maintenance				x	2
Total hours for level 3 including two hours for examination					12

Annex D: Minimum content of the theoretical education

Table 2

THEORETICAL CONTENTS for levels 4-a, 4-b, 5-a, 5-b	COMPETENCE LEVELS				
	4-a	4-b	5-a	5-b	hours
Introduction to Composite Materials	x	x	x	x	2
Fibres, Resins and Foams	x	x	x	x	2
Sandwich Concept	x	x	x	x	2
Introduction to traditional lamination techniques	x	x	x	x	2
Flow Resin and Darcy Law	x	x	x	x	1
Coefficient of Impregnations	x	x	x	x	2
Machinery and equipment for bagging	x	x	x	x	2
Vacuum Bagging Manufacturing	x	x	x	x	2
Intermediate Defect Analysis and Repair	x	x	x	x	2
Total hours for level 4-a including two hours for examination					17
Machinery and Equipment for Infusion		x		x	1
Infusion Layouts		x		x	1
Infusion Manufacturing		x		x	2
Intermediate Defect Analysis and Repair		x		x	2
Infusion Techniques vs. Traditional Techniques		x		x	1
Total hours for level 4-b including two hours for examination					24
Process definition and control			x	x	6
Intermediate Materials			x	x	2
material testing and inspection of composite parts			x	x	2
Advanced Materials			x	x	1
evaluation and approval of new raw materials and standard laminates			x	x	1
Advanced laminate defect analysis-repair			x	x	1
Process Documentation			x	x	2
documents and records, procedures and working instructions			x	x	2
Process Management			x	x	2
Total hours for level 5-a including two hours for examination					33
Total hours for level 5 -b including two hours for examination					40

Annex E: Minimum content of the practical education

Minimum content of the practical education (See table 1 and 2 for more details)

levels 1 3 within 1 (or 2) hour(s) the candidate is to demonstrate her/his ability in fabricating a monolithic (or a sandwich) laminate referring to one of the selected internal standards.

levels 2 3 within 3 hours the candidate is to demonstrate her/his ability in preparing and assembling two parts referring to one of the selected internal standards.

levels 3 within 4 hours the candidate is to demonstrate her/his ability in preparing, calibrating and using internal machines and equipment.

levels 4-a and 5-a within 9 hours the candidate is to demonstrate her/his ability in vacuum bagging or vacuum infusing a laminate referring to one of the selected internal standards.

levels 4-b and 5-b within 12 hours the candidate is to demonstrate her/his ability in vacuum bagging or vacuum infusing a laminate referring to one of the selected internal standards.

At the end of each practical session the candidate will report the operations (in the lamination reports) and, after curing, check the quality level of the laminate or secondary bond.

Table 1

PRACTICAL CONTENTS for levels 1-a, 1-b, 2, 3	COMPETENCE LEVELS				
	1-a	1-b	2	3	hours
BASIC LAMINATION – monolithic lamination plan, bill of materials and working instructions handling and preparation of gel coats and resins preparation of the reinforcements impregnation ratio and catalyst/hardener ratio monolithic (outer skin) lamination lamination report laminate check (after curing)	x	x	x	x	1
BASIC LAMINATION – sandwich lamination plan, bill of materials and working instructions handling and preparation of gel coats, resins, bonders preparation of the reinforcements and the core impregnation ratio and catalyst/hardener ratio sandwich lamination lamination report laminate check (after curing)		x	x	x	1
ASSEMBLING lamination plan, bill of materials and working instructions surface preparation handling and preparation of resins, bonders, putties preparation of the reinforcements (and the core) impregnation ratio and catalyst/hardener ratio fixing of the parts and sealing bonding of the parts (taping) lamination report bonding check (after curing)			x	x	1
MACHINES AND EQUIPMENT M&E start-up M&E calibration M&E use M&E maintenance				x	1
Total hours for level 3					4

Annex E: Minimum content of the practical education

Table 2

PRACTICAL CONTENTS (to be developed in parallel with the theoretical training course) for levels 4-a, 4-b, 5-a, 5b					
	4-a	4-b	5-a	5-b	hours
Lamination plan, bill of materials and working instructions, mould preparation and gel coat application	x	x	x	x	2
Skin coat application	x	x	x	x	2
Technical flange preparation, preparation of consumables	x	x	x	x	1
Arrangement of the reinforcements (I Skin)		x		x	1
Arrangement of the core material	x	x	x	x	1
Arrangement of the reinforcements (II Skin)		x		x	1
Bag preparation and arrangement	x	x	x	x	2
Test of the vacuum plant, handling and preparation of the resins, impregnation ratio and catalyst/hardener ratio	x	x	x	x	1
Bonding of the core material using vacuum, lamination report, laminate check (after curing)	x			x	1
Resin infusion cycle, vacuum pump start-up, lamination report, laminate check (after curing)		x		x	1
Total hours for level 4-a					9
Total hours for level 5-a					9
Total hours for level 4-b					12
Total hours for level 5-b					12

Annex F: Certificate for Tutor in Marine Composite Training Courses (Standard Form)

Certificate for Tutor in Marine Composite Training Courses (Standard Form)

Certificate Number.....

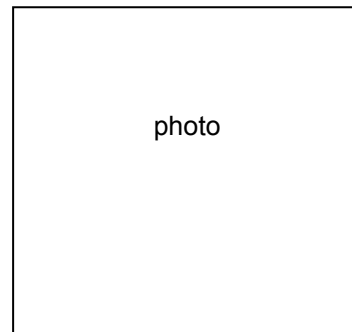
Tutor's Name:

Identification:

Method of identification: Photograph

Date and place of birth:

Employer:



This is to certify that the above-mentioned person has been approved for carrying out the functions of teacher and commission examination member in training courses for certification of technicians and process managers according to:

Place and date

This Certificate is valid until

Signature

This Certificate is connected to Consulting Contract No. dated,
and its validity is linked to the validity of the aforementioned Consulting Contract.