



# **Rules for the Qualification and Certification of Marine Adhesive Bonders for Yachts**

*Effective from 1 January 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](http://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 AND FIELD OF APPLICATION**

**1.1**

These Rules set out the procedures applied by Tasneef for the qualification and certification of Marine Adhesive Bonders (MAB) for yachts, as well as the procedures to be followed by organisations in order to apply for, obtain and maintain such certification.

**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.

**1.3**

The terms used in these Rules are the same as those in the ISO/IEC 17024 and UNI CEI EN 45020 Standards.

**2 REFERENCE STANDARDS**

**2.1**

The applicable standards for the above-mentioned qualification are indicated in Tab 1.

**Table 1: Minimum training requirements**

ASTM	D907-00	-	<i>Standard Terminology of Adhesives</i>
ASTM	D1002-01	-	<i>Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal)</i>
ASTM	D1062-96e1	-	<i>Standard Test Method for Cleavage Strength of Metal-to-Metal Adhesive Bonds</i>
ASTM	D2093-97	-	<i>Standard Practice for Preparation of Surfaces of Plastics Prior to Adhesive Bonding</i>
ASTM	D2651-01	-	<i>Standard Guide for Preparation of Metal Surfaces for Adhesive Bonding</i>
ASTM	D3163-01	-	<i>Standard Test Method for Determining Strength of Adhesively Bonded Rigid Plastic Lap-Shear Joints in Shear by Tension Loading</i>
ASTM	D3807-98	-	<i>Standard Test Method for Strength Properties of Adhesives in Cleavage Peel by Tension Loading (Engineering Plastics-to-Engineering Plastics)</i>
ASTM	D4800-94(1999)	-	<i>Standard Guide for Classifying and Specifying Adhesives</i>
ASTM	D5041-98	-	<i>Standard Test Method for Fracture Strength in Cleavage of Adhesives in Bonded Joints</i>
ASTM	D5573-99	-	<i>Standard Practice for Classifying Failure Modes in Fiber-Reinforced-Plastic (FRP) Joints</i>
ASTM	D5868-01	-	<i>Standard Test Method for Lap Shear Adhesion for Fiber Reinforced Plastic (FRP) Bonding</i>

**3 TERMS AND DEFINITIONS**

**3.1 General**

For the purposes of this Specification, the terms and definitions given in ASTM D907-00 and the following apply.

**3.2 Adhesive Bonder**

A professional with industrial experience who can carry out bonding without supervision. He is able to read and understand working instructions and is well informed about production methods concerning adhesive products.

**3.3 Examiner**

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

**3.4 Applicant**

Person undergoing the examination.

**3.5 Marine Adhesive Bonder**

An Adhesive Bonder specifically trained and qualified to bond structures in marine constructions.

**3.6 Application System**

Manual or semi-automatic dispenser machine.

**3.7 Adhesive Families**

The following adhesive families will be considered:

Epoxy, Hot melt, Acrylic, Polyurethane (mono-component), Polyurethane (bi-component), Methacrylate, Structural Adhesive Tapes.

The adhesive family used for the practical examination will be indicated on the certificate.

**3.8 Substrate materials**

The following types of substrate materials will be considered:

Stainless Steel, Aluminium, Fibre Reinforced Plastics, Glass and Wood.

The joint substrates could be of different types. The types of substrates will be indicated on the certificate.

**3.9 Type of Joints**

The types indicated in Figures 1 to 5 are considered.

**3.10 Range of qualification**

The qualification range is the content for which the MAB is qualified. For details about the qualification range reference is to be made to [5.5].

**3.11 Tutor**

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

**Figure 1: Joint Type 1**




Lap Joint	
Single Strap Joint	
Double Strap Joint	



Figure 2: Joint Type 2

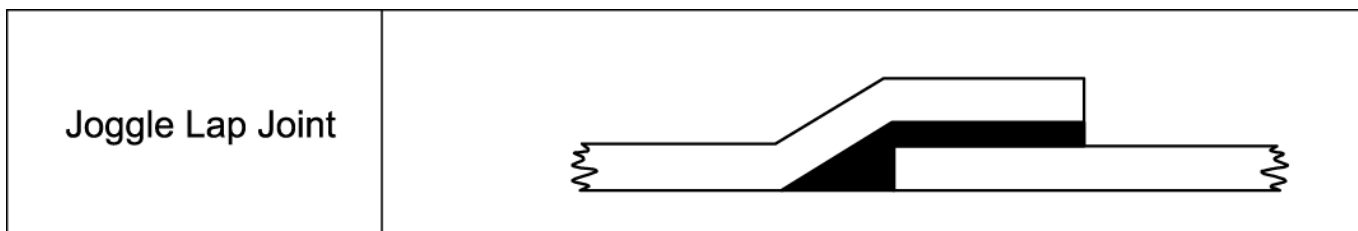


Figure 3: Joint Type 3

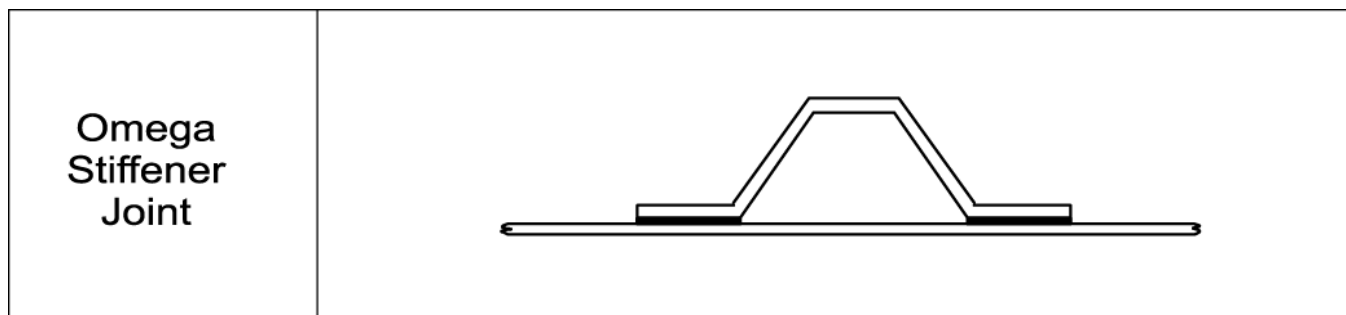


Figure 4: Joint Type 4

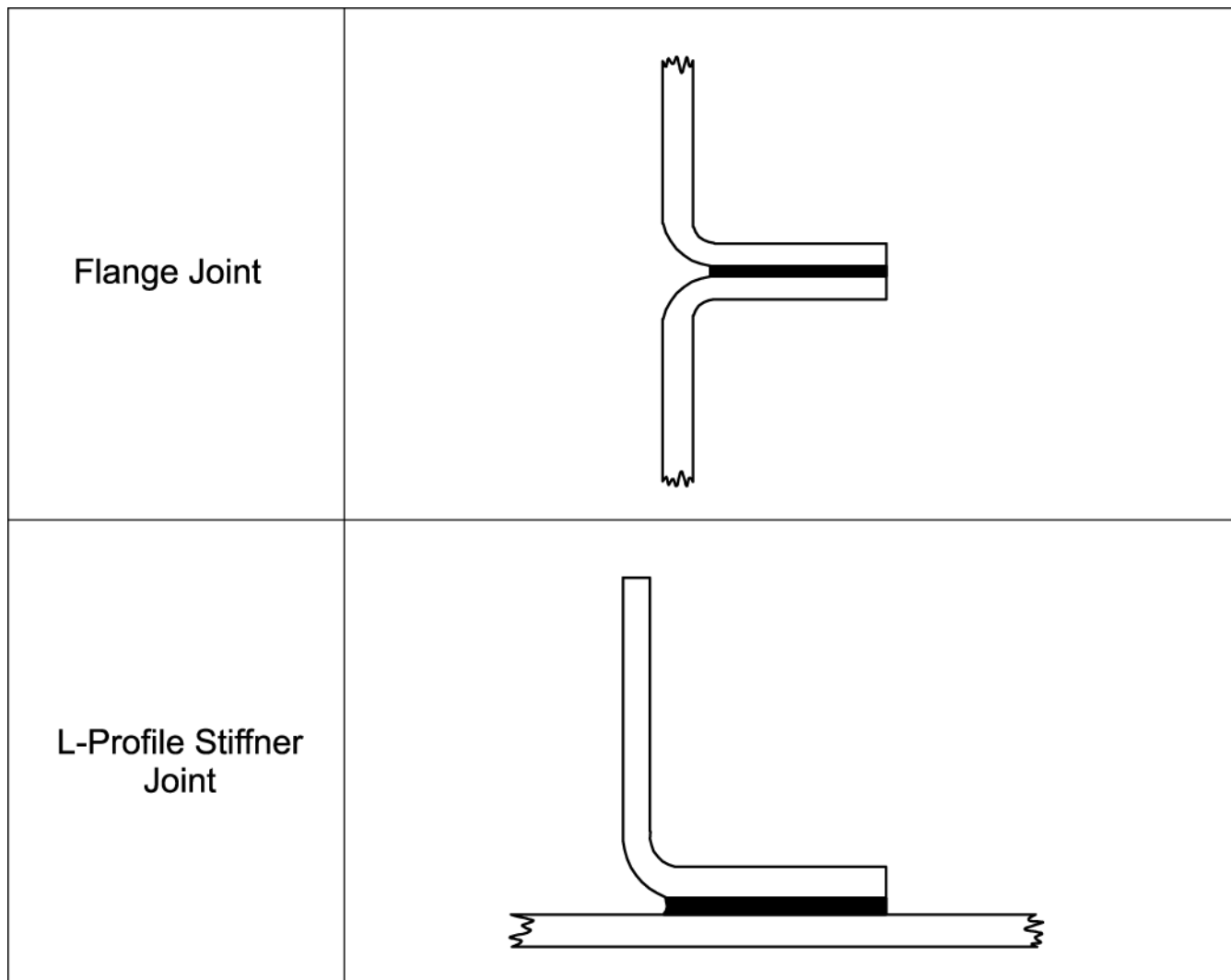
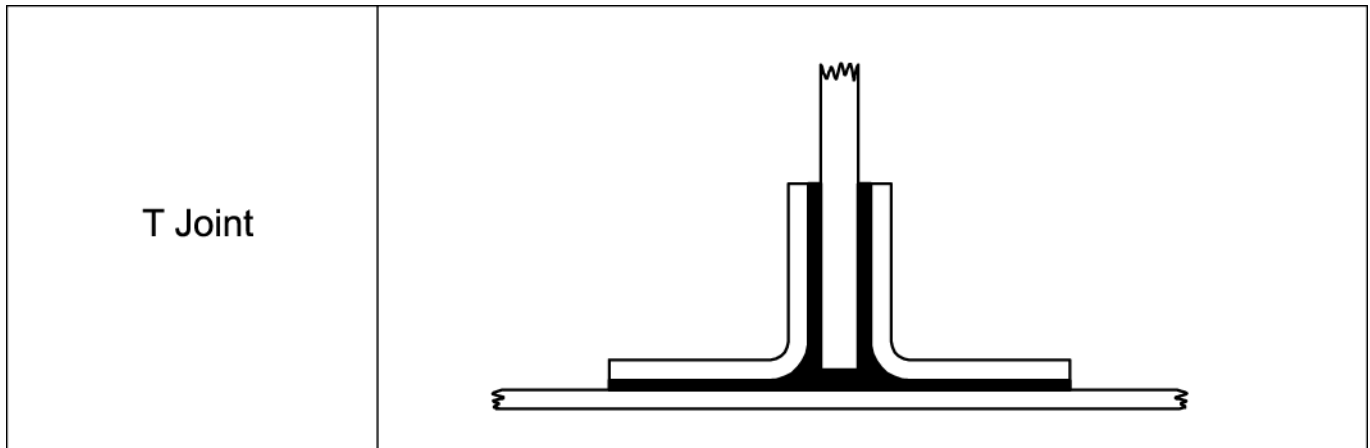


Figure 5: Joint Type 5



#### 4 REQUIREMENTS FOR ADMISSION TO THE EXAMINATION

##### 4.1

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

##### 4.2

Candidates must prove they have spent two years working uninterrupted in the specific field of glued structures.

##### 4.3

The candidate shall provide proof that he has satisfactorily completed a Tasneef recognised theoretical and practical training course. The theoretical education is based on a training course of 16 teaching hours. The minimum content of the theoretical education is given in Annex 3.

The practical education consists in a training course of 8 teaching hours. The minimum content of the practical education is given in Annex 4.

#### 5 CERTIFICATION PROCESS

##### 5.1

Course tutors must possess the qualification and experience requirements defined below.

##### 5.2

On the basis of the information submitted, following a preliminary examination to check that there are no omissions, Tasneef will formulate an economic offer as well as providing course information, which will be sent together with a copy of these Rules.

##### 5.3

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 formalise 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 certification concerned.

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

##### 5.4

Tasneef may hold the qualification examination at its examination centres or at the applicant's facilities.

##### 5.5

The qualification is related to the qualification range which is based on the variables (Application systems, Adhesive families, Substrate materials and Type of joints) tested during the practical examination. The qualification range will be indicated on the certificate. Changes in any variable require new certification.

## **6 EXAMINATION**

### **6.1 General**

The qualification exam comprises:

- Theoretical Examination;
- Practical Examination.

Generally, the examination and in particular the Practical examination is to be carried out at the Organization's facilities. This location is to be agreed prior to commencing the examination

### **6.2 Theoretical Examination**

**6.2.1** The examination consists of 80% questions with multiple choice answers and 20% with open-ended answers. The questions cover all the subjects given in the Specifications.

Candidates have two hours to complete the test.

### **6.3 Practical Examination**

**6.3.1** Candidates will perform the test on the samples relevant to the requested qualification range using the adhesion procedure chosen by the commission. Commission members make provision for the identification by means of permanent marking of the samples for subsequent destructive tests. Also during the sample test execution, the commission will judge the following aspects:

- Joint execution according to the given procedure
- Preparation care
- Adhesive mixing
- Personal protection
- Working time
- Thickness and finishing of the adhesive
- Waste materials quantity and tool cleaning.

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 Organization.

### **6.4 Examination of the results**

**6.4.1** The Commission will examine the results of theoretical and practical examinations and laboratory tests according to Tab 2.

**6.4.2** 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.

**6.4.2** 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.

**6.4.3** 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.

**6.4.4** 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, they must wait for at least one year.

**6.4.5** Candidates who have passed only one of the two tests may be allowed to repeat the failed test – without repeating the passed test – within six months from the date of the first exam. After six months, candidates must take both tests again.

**6.4.6** 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 examination

### **6.5 Requirements for Tasneef tutor qualification**

**6.5.1** The candidates to be qualified as "tutor" are to satisfy the following conditions

**6.5.2** They must prove they have spent at least five years in the specific field they require to be qualified in.

**6.5.3** They are to be qualified as Marine Adhesive Bonder, according to these Rules, for a qualification range indicated in [5.5] equivalent to the one for which the tutor's qualification is required.

**6.5.4** The applicants who possess requirements as per [6.5.2] and [6.5.3] are to hold a training course under the supervision of a Tasneef exclusive technician.

**6.5.5** Tasneef, after satisfactory results of the above qualification steps, will issue a Certificate, stating that the candidate has been approved as Tasneef tutor, qualified for tutor's activities for a specific qualification range foreseen in these Rules.

The validity of the Tutor's Certificate is one year. To operate as Tasneef tutor, a specific consultancy contract between Tasneef and the tutor is to be stipulated.

**6.5.6** Upon request of the tutor and if deemed appropriate by Tasneef, the Certificate may be renewed after the satisfactory outcome of the activity performed during the last period of validity.

## **7 ISSUE OF THE CERTIFICATES**

### **7.1**

Tasneef, upon satisfactory review of the final report, the examination reports and the documents produced by the candidates, decides to issue the certificates (see Annex 2).

A certificate will be issued, for each Marine Adhesive Bonder examined, stating that he has been approved for qualification according to the Tasneef "Rules for the Qualification and Certification of Marine Adhesive Bonders for Yachts".

## **8 VALIDITY OF CERTIFICATES**

### **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 audit the following conditions:

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

## **9 RENEWAL OF CERTIFICATES**

### **9.1**

At the end of the five-year period, the certificate expires and the MAB 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 joints and adhesives stated on the Certificate, according to [6.3].

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

In the case of expiry of the Certificate, the MAB may be re-qualified following the steps laid down in [6].

Applications to renew certification must be presented to Tasneef, as indicated in [6].

## **10 WITHDRAWAL OF THE CERTIFICATION**

### **10.1**

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

- surveillance of sites and production units;
- certification or periodic audits on company quality systems according to UNI EN ISO 9001:2000 standards;
- certification or periodic audits on products subject to statutory constraints (e.g.: EC Directives);third party industrial certification activities;
- third-party industrial certification activities.

### **10.2**

Within the scope of these activities, Tasneef may withdraw the certificates of qualified MAB if:

- it finds that the conditions indicated in [8] are not satisfied;
- objective documented evidence shows that qualified staff are unable to guarantee the professional skills demonstrated during their qualifying exam.

### **10.3**

Withdrawal of a certificate will be notified by registered letter to the Organisation and will cause the person in question to be deleted from the list indicated in [11].

### **10.4**

Personnel whose certificate has been withdrawn must return the relative 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 not use the certificate and its relative copies if certification has been withdrawn.

## **11 LIST OF MABS CERTIFIED BY Tasneef**

### **11.1**

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

- the official name of the Organisation;
- the number of qualified MABs;
- Reference to the Rules for the Qualification and Certification of Marine Adhesive Bonders (MAB) for yachts;
- the date of expiry of the Certificate.

Where the Organisation is an individual who has given his consent to the use of 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 web site [www.Tasneef.org](http://www.Tasneef.org).

## 12 TRANSFER OF THE CERTIFICATE

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

**Table 2**

	min	max	Acceptance criteria
Theoretical examination	0	100	$\geq 60$
Practical examination	0	100	$\geq 70$
Laboratory tests			<ul style="list-style-type: none"> <li>• For NDT: only minor defects may be accepted</li> <li>• For destructive tests:                             <ul style="list-style-type: none"> <li>– Substrate failure occurs;</li> <li>– Cohesive failure occurs (but further examination needed);</li> <li>– Failure occurs at not less than 90% of the strength at which that joint should theoretically fail.</li> </ul> </li> </ul>

**Annex 1 – Model of Certification Request Form**

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## Certification Request 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 Marine Adhesive Bonders”:

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:

**Adhesive families:**

- Epoxy  Acrylic  Polyurethane (Mono-component)  Hot Melt
- Methacrylate  Structural Tapes  Polyurethane (Bi-component)

**Substrates:**  FRP  Aluminium  Stainless Steel  Mineral Glass  Wood

**Application system:**  Manual  Semi-automatic

**Type of joints (see Rules for the qualification of Marine adhesive Bonders par. 3.9):**

- joint type 1  joint type 2  joint type 3  joint type 4  joint type 5

Place and Date

Signature

**Annex 2 – Model of Marine Adhesive Bonder's Qualification Certificate**

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## Marine Adhesive Bonder's Qualification Certificate



Certificate Number .....

Marine Adhesive Bonder'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 the **Tasneef Rules for the Qualification and Certification of Marine Adhesive Bonders**

This qualification is valid for:

Adhesive Families:	..... ..... .....
Substrate Materials:	..... ..... .....
Types of Joint:	..... ..... .....
Application System:	..... ..... .....

Place and date

This Certificate is valid until

\_\_\_\_\_

\_\_\_\_\_

Intermediate Validation

\_\_\_\_\_

Signature

\_\_\_\_\_

## **Minimum content of the theoretical education**

### **1 Adhesives and Sealants - Definitions and different applications**

The difference between adhesive and sealant will be described and the relevant definitions given. Furthermore, as regards adhesives, the difference between structural and non structural adhesives will be illustrated.

### **2 Adhesion theory**

#### **2.1 Definitions**

The main definitions will be given including adherent, adhesive, interphase and substrate.

#### **2.2 Type of forces**

The adhesive and cohesive forces will be described.

#### **2.3 Adhesive bonding characteristics**

A brief description of the advantages and disadvantages of adhesive bonding, relevant to the various aspects such as joint design, production process, competitiveness and the limitations of using this system will be given.

### **3 The joint**

#### **3.1 Types of stress**

A brief description of tensile and compressive stress, shear stress, cleavage and peel stress will be given.

#### **3.2 General joint design rules**

A brief description will be given of the factors mainly influencing joint resistance such as bond width, adhesive flexibility, adherent stiffness, etc.

#### **3.3 Factors influencing joint efficiency**

A description will be given of how the adhesive properties, adhesive thickness, geometry of bonded area and the adherent properties can influence joint efficiency.

#### **3.4 Common adhesive joint designs**

The main types of joints used in marine applications will be described.

### **4 Adhesives and sealants classification**

#### **4.1 History**

An overview of the history and use of adhesives will be given.

#### **4.2 Chemical definitions**

The main chemical definitions will be given, at least the difference between thermosetting and thermoplastic adhesives.

#### **4.3 Main families and classification of adhesives**

The common methods of classifying adhesives and a description of the common chemical families of materials used in adhesive formulations will be described.

#### **4.4 Main families and classification of sealants**

The common methods of classifying sealants and a description of the common chemical families of materials used in sealant formulations will be described.

#### **4.5 Primers and Adhesion Promoters**

Definitions of primers and adhesions promoters, their application and use.



**Annex 3 – Minimum content of the theoretical education**

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**5 Joint failure**

The failure modes of a bonded joint will be briefly described.

**6 The technical data sheet**

A description of the technical data sheet, its structure and the importance of the data reported will be given.

**7 The European Safety Data Sheet**

Description of the main purpose, structure and references to EU legislation on the requirements for information on health, safety and environmental protection.

**8 Personal Protection**

Description of the types of risks connected to the various adhesives used and the relevant personal protective devices.

**9 Environment and recycling concern**

Notes on environmental protection, recycling and waste disposal.

**Annex 4 – Minimum content of the practical education**

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## **Minimum content of the practical education**

### **1 Practical Training – Minimum Contents**

The aim of practical training is to prepare the applicant for the MAB Examination.

At the end of the practical training, the applicant should have practice in the use of adhesives within the requested qualification range and in the use of the relevant tools to execute the correct operations.

### **2 Surface verification**

A description of the necessity and methods of evaluation of surface condition prior to the bonding operation.

### **3 Surface preparation**

Description of the common procedures for surface preparation, relevant to the different substrates and adhesives, and the influence on initial adhesion and long-term durability.

### **4 Adhesive preparation**

The importance of storage conditions, the tools and systems for correct adhesive mixing and the application techniques will be described.

### **5 Assembly and visual inspection**

The adhesive application methods (hand lay-up, gun, etc.) and the need for visual inspections after assembly will be described.

### **6 Environmental conditions, Polymerization and Cure**

How environmental conditions, during bonding activities, can influence the final joint strength will be described.

The description of the polymerization process and the cure effects on the joint will be given.

### **7 Quality Control of Bonded Structures**

The methods for controlling the bonding operation will be given.

**Annex 5 – Model of Certificate as Tutor for Marine Adhesive Bonders Training Courses**

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**Certificate as Tutor for Marine Adhesive Bonders Training Courses**

Certificate Number.....

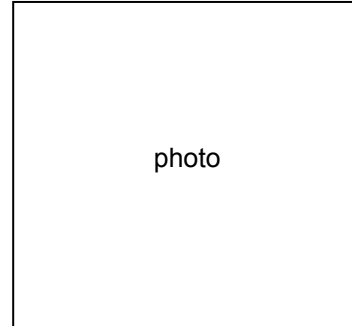
Tutor's Name:

Identification:

Method of identification: Photograph

Date and place of birth:

Employer:



This is to certify that the above-mentioned person has been approved as teacher and examination commission member related to training courses for the certification of marine adhesive bonders having the following

**Range of Qualification**

Adhesive Families:	..... .....
Substrate Materials:	..... .....
Types of Joint:	..... .....
Application System:	..... .....

Place and date

This Certificate is valid until

\_\_\_\_\_  
Signature

\_\_\_\_\_