



Rules for the Certification and Acceptance on Board of Class A and B Fire Doors

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GENERAL CONDITIONS

Definitions:

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

"IACS" means the International Association of Classification Societies.

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

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

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

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

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

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

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

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

Article 1

- 1.1. The purpose of the Society is, among others, the classification and certification of ships and the certification of their parts and components. In particular, the Society:
 - (i) sets forth and develops Rules;
 - (ii) publishes the Register of Ships;
 - (iii) issues certificates, statements and reports based on its survey activities.
- 1.2. The Society also takes part in the implementation of national and international rules and standards as delegated by various Governments.
- 1.3. The Society carries out technical assistance activities on request and provides special services outside the scope of classification, which are regulated by these general conditions, unless expressly excluded in the particular contract.

Article 2

- 2.1. The Rules developed by the Society reflect the level of its technical knowledge at the time they are published. Therefore, the Society, although committed also through its research and development services to continuous updating of the Rules, does not guarantee the Rules meet state-of-the-art science and technology at the time of publication or that they meet the Society's or others' subsequent technical developments.
- 2.2. The Interested Party is required to know the Rules on the basis of which the Services are provided. With particular reference to Classification Services, special attention is to be given to the Rules concerning class suspension, withdrawal and reinstatement. In case of doubt or inaccuracy, the Interested Party is to promptly contact the Society for clarification. The Rules for Classification of Ships are published on the Society's website: www.tasneef.ae.
- 2.3. The Society exercises due care and skill:
 - (i) in the selection of its Surveyors
 - (ii) in the performance of its Services, taking into account the level of its technical knowledge at the time the Services are performed.
- 2.4. Surveys conducted by the Society include, but are not limited to, visual inspection and non-destructive testing. Unless otherwise required, surveys are conducted through sampling techniques and do not consist of comprehensive verification or monitoring of the Ship or of the items subject to certification. The surveys and checks made by the Society on board ship do not necessarily require the constant and continuous presence of the Surveyor. The Society may also commission laboratory testing, underwater inspection and other checks carried out by and under the responsibility of qualified service suppliers. Survey practices and procedures are selected by the Society based on its experience and knowledge and according to generally accepted technical standards in the sector.

Article 3

- 3.1. The class assigned to a Ship, like the reports, statements, certificates or any other document or information issued by the Society, reflects the opinion of the Society concerning compliance, at the time the Service is provided, of the Ship or product subject to certification, with the applicable Rules (given the intended use and within the relevant time frame). The Society is under no obligation to make statements or provide information about elements or facts which are not part of the specific scope of the Service requested by the Interested Party or on its behalf.
- 3.2. No report, statement, notation on a plan, review, Certificate of Classification, document or information issued or given as part of the Services provided by the Society shall have any legal effect or implication other than a representation that, on the basis of the checks made by the Society, the Ship, structure, materials, equipment, machinery or any other item covered by such document or information meet the Rules. Any such document is issued solely for the use of the Society, its committees and clients or other duly authorised bodies and for no other purpose. Therefore, the Society cannot be held liable for any act made or document issued by other parties on the basis of the statements or information given by the Society. The validity, application, meaning and interpretation of a Certificate of Classification, or any other document or information issued by the Society in connection with its Services, is governed by the Rules of the Society, which is the sole subject entitled to make such interpretation. Any disagreement on technical matters between the Interested Party and the Surveyor in the carrying out of his functions shall be raised in writing as soon as possible with the Society, which will settle any divergence of opinion or dispute.
- 3.3. The classification of a Ship, or the issuance of a certificate or other document connected with classification or certificate on and in general with the performance of Services by the Society shall have the validity conferred upon it by the Rules of the Society at the time of the assignment of class or issuance of the certificate; in no case shall it amount to a statement or warranty of seaworthiness,

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

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

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

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

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

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

Article 4

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

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

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

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

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

Article 5

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

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

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

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

Article 6

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

- 6.2. However,

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

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

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

Article 7

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

Article 8

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

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1 PREMISE

The Rules for the Classification of Ships (Pt C, Ch 4, Sec 1) require that the doors installed on A and B class divisions be type approved.

These Rules describe the procedures for the certification and acceptance on board of fire doors.

2 FIELD OF APPLICATION

These Rules apply to class A and B fire doors.

3 DEFINITIONS AND ABBREVIATIONS

3.1 MED Directive

European Community Directive 96/98/EC and subsequent amendments.

3.2 FTP Code

International Code for Application of Fire Test Procedure of the International Maritime Organization (IMO).

4 FIRE DOORS INSTALLED ON Tasneef CLASSED SHIPS

Class A and B fire doors intended to be installed on Tasneef classed ships are to be type approved by Tasneef and tested at the Manufacturer's facility.

Fire doors intended to be installed on ships flying a flag of one of the countries of the European Community are to be certified in accordance with the requirements of the MED Directive, under the conditions specified in item [8].

As far as classification is concerned, the certification of doors by Tasneef in accordance with the MED Directive is considered equivalent to Tasneef type approval.

5 TESTING AND CERTIFICATION OF FIRE DOORS

5.1 General

The procedures for issuance of Tasneef type approval certificate and those for issuance of type approval in accordance with the MED Directive (Module B) make reference to the same International Standards (FTP Code) and only differ in relation to the type of certificate issued. The testing procedures are quite similar also when the Manufacturer applies for production certification in accordance with Module F of the MED Directive. Also in this case the main difference consists in the type of the certificate.

5.2 Type approval certification

5.2.1 Documents to be submitted

Detailed drawings of the door for the certification is requested are to be submitted for review to Tasneef Head Office. The drawings are to indicate all the information necessary to build the door and are to include the material characteristics.

5.2.2 Sampling

A sample built in accordance with the applicable requirements of the FTP Code is to be sent to the Tasneef testing laboratory or to another recognised laboratory.

5.2.3 Type test

The sample is to be subjected to the standard fire test in accordance with the requirements of the FTP Code. If the fire test is not carried out by the Tasneef testing laboratory, the tests are to be attended by a Tasneef Surveyor.

5.2.4 Issue of the certificate

Upon the satisfactory completion of the type test, a Tasneef Type Approval Certificate and/or a MED Directive Module B Certificate are/is issued. The certificate has a validity of five years; at the end of the validity period the repetition of the type test may be required at Tasneef's discretion.

5.3 Production control

5.3.1 Individual testing

All doors produced on the basis of a Tasneef Type Approval Certificate are to be individually tested at the Manufacturer's facility in the presence of a Tasneef Surveyor, in accordance with the Tasneef "Rules for the testing and certification of materials and marine products".

These tests are intended to verify the conformity of the door with the prototype that has been subjected to the fire test.

The doors produced by the Manufacturer are to be identical to the one subjected to the type test; no modification is acceptable unless it has been approved by Tasneef Head Office in accordance with the procedure indicated in [6].

5.3.2 Testing of doors certified in accordance with the MED Directive

Doors which are produced in conformity to the MED Directive Module B certificate issued by Tasneef are to be tested at the Manufacturer's facility in accordance with one of the following procedures:

- As indicated in item [5.3.1], if the Manufacturer has applied for the certification of the production as per the MED Directive Module F.
- As indicated in the Tasneef "Rules for the Certification of Marine Equipment in accordance with European Directive 96/98/CE and subsequent amendments", if the Manufacturer has applied for the certification of the production as per the MED Directive Module D or E. Also in this case no modification of the fire tested prototype is acceptable unless it has been agreed to by Tasneef Head Office in accordance with the provisions of [6].

6 DOORS HAVING DETAILS DIFFERENT FROM THE CERTIFIED PROTOTYPE

6.1 General

Any alterations to a door tested for the issuance of the type approval certificate are to be submitted to Tasneef Head Office. The Head Office will decide at its discretion whether the alterations are such as to require a repetition of the type tests or whether an extension of the approval issued for the prototype may be granted.

6.2 Evaluation of alterations

6.2.1 Doors with alterations such as not to require the repetition of the type test

Minor alterations regarding the fire resistance of the door may be accepted by Tasneef Head Office, based on its experience and on the documentation submitted by the Manufacturer, provided that the alterations are not such as to affect the results obtained during the prototype fire test. In such cases, Tasneef Head Office issues an extension of the approval with a description of the details of the prototype that have been altered.

Examples of alterations that might be considered acceptable without repetition of the fire test are the following:

- a) doors of dimensions smaller than the certified prototype,
- b) sliding doors with fewer leaves than the certified door, provided no leaf exceeds the dimensions of the largest leaf of the certified door,
- c) hinged doors opening in a direction opposite to the certified door,
- d) doors having one linear dimension (height or width) exceeding the corresponding dimension of the certified door by not more than 10%.

However, also for the above listed alterations, the extension of the approval is to be requested from Tasneef Head Office on a case-by-case basis.

6.2.2 Inspection of doors which require special verification for granting the extension of the approval

Tasneef reserves the right to grant the extension of approval of a fire door using alternative verification methods, which supply results equivalent to those obtained by the fire test indicated in [5.2.3], for those doors that cannot be considered covered by the prototype type approval certification as indicated in [6.1] and [6.2.1].

For such doors the type test may be replaced by a numeric simulation of the fire test performed through a non-linear finite element analysis, provided that the alterations are limited to variation of details relative to the door and/or door frame construction (for instance the addition or removal of some brackets or chokes) and to the increase of the door linear dimensions (width and/or height).

Such analysis is to be performed in accordance with the requirements indicated in [7] below.

Subject to the satisfactory outcome of the finite element analysis it is possible to issue an approval extension to the modified door.

7 FINITE ELEMENT ANALYSIS FOR THE SIMULATION OF THE FIRE TEST

7.1 General

A finite element analysis can be used solely to extrapolate the fire test results to a door having geometry different from the tested door.

The methodology used to extrapolate the fire tests results is based on the following three steps:

- a) standard fire test of the "specimen" to obtain reference temperature and structural displacements. Such "specimen" may be either a door already certified through the fire test which has geometry similar to the door to be analysed, or a specially built specimen

where the finite element method is to be performed to extrapolate the results of a specimen to an actual door having a size exceeding the maximum size allowed by the furnace of the testing laboratory;

- b) finite element analysis of the "specimen" to calibrate the thermal and mechanical boundary conditions of the FEM model, which are adjusted until the numerical and experimental temperature and displacement distribution compare satisfactorily;
- c) finite element analysis of the actual door carried out using the model calibrated in step b), assuming that the differences in the geometry and dimensions between the actual door and the specimen door do not significantly influence the results.

7.2 Data to be submitted

In order for the analysis to be carried out, the following information is to be submitted:

- a) detailed drawings of the door, the door frame and the closure and locking devices including the indications of clearances and interferences;
- b) test report of the prototype used to extrapolate the results;
- c) mechanical characteristics of all materials used for the construction of the door and its insulation;
 - young's module
 - yield strength
 - density
- d) thermal properties:
 - thermal expansion coefficient
 - thermal conductivity
 - specific heat.

Since all these properties are temperature dependent, it is necessary that the required data should be given as a function of the temperature range foreseen for the fire tests. Where it is not possible to obtain experimental data, an engineering evaluation is to be submitted with the supporting considerations for the proposed curves of variation of mechanical and thermal characteristics as a function of the temperature in the considered range.

7.3 Method of analysis

7.3.1 General

The comparison of the fire resistance of doors having different geometry may be broken down into two steps:

- a) evaluation of the heat transmission through the specimen thickness and of the temperature on the unexposed specimen surface
- b) evaluation of the strength characteristics and of the displacements of the structural members of the specimen.

7.3.2 Heat transmission analysis

By carrying out finite element calculations, the histories over time of the heat transmission within the structural assembly are computed and the temperature is compared with the temperature experienced by the assembly represented in the standard fire test.

Based on suitable data for the temperature dependent variables, an iterative procedure is used for the evaluation of thermal-mechanic properties.

The thermal boundary conditions of convecting and radiative type are respectively:

where:

$$q_c = h_c(T_s - T_\infty)$$

and

$$q_r = \sigma \varepsilon (T_s^4 - T_\infty^4)$$

q_c and q_r : Radiate and convective heat flux, respectively
 h_c : Convective heat transfer coefficient
 σ : Stefan-Boltzmann constant
 ε : Emissivity coefficient
 T_s : Surface temperature
 T_∞ : Furnace or ambient temperature

The two equations can be included in an equivalent boundary condition:

$$q = H_{eq}(\sigma, \varepsilon, T_s, T_\infty)(T_s - T_\infty)$$

where the equivalent coefficient H_{eq} depends on the unknown surface temperature. However, it can be calculated as part of the finite element analysis using an emissivity coefficient appropriately calibrated with the fire test results.

The equivalent heat transfer coefficient can be assumed to be constant on the single exposed surface, as the furnace assembly built in accordance with the FTP Code gives a remarkable uniformity of the temperature and heat flux within the furnace.

In alternative, the temperature distribution measured on the specimen of the standard fire test can be directly applied on the finite element structural model taking into account the same time histories.

7.3.3 Structural analysis

Using the results of the heat transmission analysis and information on temperature-dependent material properties, the thermal stresses and deformations on the geometry are evaluated. When modelling the structural assembly, attention is to be paid to using a sufficient number of elements to account for the non-uniform temperature distribution within the member and to catch the non-linear temperature-dependent behaviour.

Once the model is prepared, the analysis is to be carried out stepwise. For each element, the incremental strain or deformation caused by a temperature increase is calculated and a new stress level is obtained based on the stress-strain relationship applicable for that particular temperature increase.

The mechanical boundary conditions have to be congruent in order to represent the real interaction of door with the external frame for the overall length of the test.

8 ACCEPTANCE OF DOORS NOT CERTIFIED BY Tasneef

8.1 Acceptance of doors certified by other Classification Societies or Notified Bodies

The acceptance of doors certified by another Classification Society which is part of IACS (International Association of Classification Societies) and/or by a Notified Body in accordance with the MED Directive will be considered on a case-by-case basis by Tasneef Head Office.

In any case such doors may be accepted upon satisfactory outcome of the examination of the following documentation:

- a) constructional drawings,
- b) valid certificates,
- c) report on type test carried out in accordance with the requirements of the FTP Code

and of the testing of the doors before or during installation on board in order to ascertain the conformity with the certified prototype.

8.2 Doors certified by administrations of countries that are not part of the European Community

The acceptance of doors certified by or on behalf of an Administration which is not part of the European Community may be considered on a case-by-case basis by Tasneef Head Office, provided that the class requirements are complied with.