TASNEEF
هيئة الإمـــــارات للتصـــنـيـف
EMIRATES CLASSIFICATION SOCIETY

Rules for the Certification of the Bollard Pull of Tugs

Effective from 1 January 2016

Tasneef

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EMIRATES CLASSIFICATION SOCIETY

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 Ships[1]; 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

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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

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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

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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

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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 PREMISE

With reference to Part E, Chap 14, Sec 2, [2.9.1] of the Rules for the Classification of Ships, at the Interested Party's request, tugs may be subjected to a bollard pull test. The bollard pull value is reported in a statement attached to the Certificate of Classification.
These Rules describes the procedures, the trial site and the conditions (environmental, trim of the tug, etc.) in order to execute a bollard pull test and issue a Bollard Pull Statement.

2 FIELD OF APPLICATION

These Rules are intended to be applied, at the Interested Party's request, for the purpose of executing a bollard pull test and issuing a Bollard Pull Statement to tugs possessing the following class service notations: **tug**, **salvage tug** or **escort tug**, as per Part A of the Rules for the Classification of Ships.

3 DEFINITIONS AND ABBREVIATIONS

3.1 Bollard Pull (BP)

Bollard Pull is the average value of the bollard pull measured during the test and is that obtained by the tug with its main propulsion engine(s) generating the maximum continuous power (classification power) and with the pitch of the propeller(s) set in the angular position where the maximum thrust is developed (for controlled pitch propellers).
This value is the mathematical average of five values. Each one of these values is to be calculated as the mathematical average of the readings measured in a period of at least five minutes during which the pull of the tug and the pull direction are kept almost constant.

3.2 Maximum Bollard Pull (MBP)

Maximum Bollard Pull is the mathematical average of the maximum values that are recorded during the above-mentioned periods of at least 5 minutes taken into consideration for the determination of the Bollard Pull (BP).

4 DOCUMENTATION TO BE SENT

In order for the test to be carried out, the Interested Parties are to send Tasneef the following drawings, details and information:

a) trial site (place where it is intended to execute the test)
b) detailed plan of the layout of the trial site
c) details of the measuring equipment to be used during the test
d) recording procedure for the values measured (data)
e) main dimensions and characteristics of the tug submitted to the test
f) block coefficient of the tug at the draft corresponding to the full load condition
g) draft corresponding to the full load condition (maximum draft)
h) draft and trim of the tug at the loading condition expected for the test
i) type of the main propulsion engine(s)
j) maximum continuous power (power on the basis of which classification of the tug has been requested) and corresponding revolutions per minute (RPM) of the main propulsion engine(s)
k) reduction ratio of the reduction gear(s)
l) characteristics of the propeller(s): number of blades, diameter, pitch, etc. In the case of controllable pitch propellers, the pitch (or angular position) where the maximum thrust is generated is to be indicated
m) type of the propeller skirt (e.g. Kort Nozzle), if any;
n) service speed of the tug when not engaged in operations ("free" service speed)
o) expected value of the bollard pull.

Note: The information required in items j), k) and l) is to be provided according to the type of propulsion (e.g. Shottel type, Voith type, etc.).

5 CHARACTERISTICS OF THE TRIAL SITE AND VESSEL REQUIREMENTS

5.1 Characteristics of the trial site

The trial is to be conducted in a suitable place free from obstacles and having sufficient depth, with a bollard of sufficient strength available on a legged jetty or solid pier. The characteristics of the trial site shall be the following:

a) The distance (towline length) between the stern of the tug, located in the test position, and the edge of the pier is, in general, to be not less than 4 times the ship's lengths and, in any case, not less than 100 m. In order to allow circulation clear run for the propeller wake, it is necessary for the tug to be positioned at an angle of about 60° in respect of the pier.
   The above condition ensuring adequate free water astern is especially important when the towline length is the minimum prescribed (100 m).
b) The depth of the water should generally be at least twice the maximum draft with a minimum of 10 m. The minimum required water depth shall be ensured in the area around the tug within a radius of 50 m, which shall be kept free from obstacles for the duration of the test.
c) During the test the velocity of the current shall not be more than 0,5 m/s.

d) During the test the wind speed shall not be more than 5 m/s and, in any event, shall not have a significant effect on the execution of the trial.
e) The sea conditions are to be favourable for the duration of the test and shall not have a significant effect on the outcome of the trial.

5.2 Vessel requirements

5.2.1 The tug displacement and draft are to be recorded in the relevant report at the trial and shall be as expected during the normal operation of the tug; in general, the displacement shall be that corresponding to the tug in heavy ballast condition with the fuel tanks filled to at least 50% of their capacity.

As far as practicable, the tug trim shall be that corresponding to an even keel condition with a maximum stern trim not greater than the 2% of the vessel's length.

5.2.2 All machinery and deck equipment used during the test is to in good working condition.

The maximum value of the pull measured in any phase of the test is not to be more than the value of the testing load $C_{T,}$ relevant to the towing arrangements, as provided by Part E, Chap 14, Sec 2, [2.8] of the Rules for the Classification of Ships.
In any case, the bollard pull value obtained as per [3.1] is not to be greater than the maximum value of the towing force T, on the basis of which C_T is calculated, as defined in the above-mentioned Part E, Ch 14, Sec 2, [2.8] of the Rules.

5.2.3 All machinery and deck equipment used during the test are to be part of the actual tug equipment. The propeller(s) used during the test shall also be that (those) mounted for the normal service of the tug.

5.2.4 The engine(s) shall be kept at the maximum continuous power stated by the engine Manufacturer, on the basis of which the classification of the tug has been requested, throughout the bollard pull test.

All auxiliary machinery components, such as pumps, auxiliary generators, etc., driven by the main propulsion engine(s) or by the shafting line(s) during normal service are to be kept in operation throughout the trial.

5.2.5 If the Interested Parties request the execution of a test with the main propulsion engine(s) kept in overload condition, the trial is to be carried out with the engine(s) generating the overload power which, according to the engine Manufacturer's specifications, can be maintained for one hour.

6 MEASURING AND RECORDING INSTRUMENTS TO BE USED DURING THE TEST

6.1 Throughout the test, the instrument(s) used for the measurement of the bollard pull shall be able to be provide a continuous reading of the tug pull and record the values measured either in digital format or by means of a graph.

6.2 The use of electric load cell type measuring instruments is recommended insofar as they are easily connected to recording equipment.

6.3 The instrument(s) shall, in general, be calibrated in the presence of a Tasneef Surveyor before commencement of the test.

However, calibration reports and calibration certificates issued by specialised laboratories recognised by Tasneef may be accepted provided that the last calibration was performed not more than 12 months before the date of the bollard pull test.
The accuracy of the instrument(s) shall be such that, within the measuring range, in temperatures between 0 and +40°C, the maximum deviation from the nominal value is not more than ± 2%.

6.4 The measuring instrument(s) shall be connected directly to the towline used for the test; the instrument(s) can be placed in proximity to the towing hook (on board) or to the pier bollard (ashore).
The arrangement in proximity to the towing hook has the advantage that the recording instruments are placed on board the tug.
If the measuring instruments are placed in proximity to the bollard it will be necessary to provide an efficient two-way communication system between the tug and the shore personnel responsible for monitoring the pull measurements.

7 TEST PROCEDURE

7.1 During the initial phase of the bollard pull test the main propulsion engine(s) of the tug shall be operated so as to keep the towline taut and subjected to a minimum stretch force; in this phase the tug shall be placed in the desired position for measurement of the bollard pull.

7.2 Next, the revolutions of the engine(s) are to be gradually increased until the pull readings are almost constant and the engine(s) is (are) generating maximum continuous power.

7.3 Normally, during the first period of accelerated engine revolutions, the measured pull increases to a transient maximum, followed by a decrease until an almost constant value is reached.

The 5 (five) minute measuring periods, as per the definition given in 3.1, shall start when the direction and the values of the pull start to be almost constant.

7.4 During the phase in which the pull values should be constant, it may be necessary to steer the tug so as to keep it in the correct position and prevent it from moving laterally.

In such case the corrective actions will result in fluctuations in the measured pull values.
5-minute periods during which these fluctuations reach ±10% of the mean value shall normally be ignored for the purposes of the Bollard Pull evaluation defined in 3.1.

7.5 During each period of not less than 5 (five) minutes as per 7.3, the values of the power generated by the main propulsion engine(s) and the relevant revolutions per minutes (RPM) shall be measured.

In the case of engine(s) for which reliable data regarding the power measured at the test bench are available, the value of the power generated during the test can be obtained on the basis of the fuel consumption data and/or comparison of other operating characteristics/data with those recorded at the test bench, as follows:
- revolutions per minute of the engine(s) - RPM
- revolutions per minute of the turbocharger engine(s), if any
- rake position of the injection pump of the engine(s)
- pressure and temperature of the supercharged air
- ambient temperature of the engine room.

Where reliable data regarding the power measured at the test bench are not available, the power shall be measured using a torque meter.
The power to be certified, together with the value of the BP obtained as per 3.1, shall be the average power calculated taking into consideration all periods of at least 5 (five) minutes used for the evaluation of the BP.

7.6 When some of the auxiliary machinery components that are driven by the main propulsion engine(s) or shafting line(s) during normal service are not in operation during the bollard pull test, a note to this effect will be added to the Test Report and Bollard Pull Statement issued by Tasneef. The note will indicate the maximum power absorbed by the above-mentioned machinery component(s) when in operation.

7.7 The choice of the arrangements necessary for the test, including the selection of the towline, is the responsibility of the Interested Parties.

As guidance, Table 1 gives the values of the minimum breaking load CR (in kN) of the towline, prescribed by ISO 7365 as a function of the expected Bollard Pull BP_{exp} (in kN).
In any case, throughout the test it shall be carefully verified that the maximum measured value of the pull at no time exceeds 50% of the minimum breaking load value of the towline used for the test.

7.8 The resulting angle between the geometrical axis of the towline, connecting the towing hook to the bollard, and the horizontal plane is to be evaluated.

Should the value of this angle be such as to considerably modify the value of the measured pull, it will be necessary to introduce a suitable correction.

Table 1 – Minimum breaking load of the wire used for the towline

Value of the expected Bollard Pull BP_{exp} (kN)	Minimum breaking load of the wire used for the towline (kN)
$BP_{exp} \leq 300$	$3{,}50 \times BP_{exp}$
$300 < BP_{exp} \leq 800$	$2{,}75 \times BP_{exp}$
$BP_{exp} > 800$	$2{,}25 \times BP_{exp}$

8 TEST REPORT AND ISSUE OF THE BOLLARD PULL STATEMENT

8.1 Test Report

Upon completion of the bollard pull test, the Tasneef Surveyor will prepare a Test Report containing the following information:

a) Characteristics of the tug submitted to the test and in particular:
   1) name of the tug
   2) name of the Owner of the tug
   3) shipyard that built the tug, hull number and Tasneef number
   4) gross and net tonnage
   5) length overall, breadth, moulded depth and draft

b) Characteristics of the main propulsion engine(s):
   1) maker, type, model, number of the main propulsion engine(s)
   2) maximum continuous power of main engine(s) and associated revolutions per minute (RPM) (power for which the classification has been requested)
   3) reduction ratio of the reduction gear(s)
   4) list of machinery components driven by the main propulsion engine(s) or by the shafting line(s), if any, and associated absorbed power
   5) maker, type and number of the propellers (solid blades or controllable pitch) and their characteristics (blade number, diameter, pitch and, in the case of controllable pitch propellers, the pitch, or angular position, where the maximum thrust is generated).

Note: The information required in item b) is to be provided according to the type of propulsion (e.g. Shottel type, Voith type, etc.).

c) General information relevant to the test, and in particular:
   1) date and place of the test
   2) depth of the sea at the trial site
   3) distance between the towing hook of the tug and the jetty or pier
   4) height from sea level to the bollard used to hold the towline ashore
   5) height from sea level to the holding point of the towline on the tug (towing hook)
   6) velocity and direction of the sea current
   7) speed and direction of the wind
   8) sea state (wave height).

d) Information relevant to the tug set-up at the trial, and in particular:
   1) fore and aft draft
   2) average draft
   3) trim of the tug
   4) displacement
   5) start and finish time of the test
   6) draft of the ends of the propeller blades, expressed as a percentage of the propeller blade diameter
   7) correlation between the measured pull values and the operational data of the main engine(s); see 7.5.

e) Characteristics of the measuring instruments used during the test, and in particular:
   1) maker and type of the measuring instrument(s)
   2) date of last calibration and details of the relevant calibration certificate.

f) Characteristics of the towline used during the test, and in particular:
   1) length of the towline (free length and length between the towing hook and the pier bollard)
   2) minimum breaking load.

8.2 Bollard Pull Statement

On the basis of the Testing Report, as per 8.1, Tasneef will issue a Bollard Pull Statement containing the following information:

- date and place of the test
- details of the tug
- details of the main propulsion engine(s)
- trial site details
- measured BP (see 3.1), value of the corresponding average power generated by the main engine(s) during the test (see 7.5) and MBP (see 3.2).

The Bollard Pull Statement will include any notes relevant to the specific test conditions (see, for example, 7.6) as well as the results of any particular tests required by the Interested Parties, such as bollard pull tests using main propulsion engine(s) in overload condition (see 5.2.5).

The Bollard Pull Statement is attached to the Certificate of Classification of the tug.

8.3 Validity of the Statement

The Bollard Pull Statement shall automatically cease to be valid in the event of changes to the tug's characteristics on the basis of which the BP was obtained (e.g. alteration of the maximum power generated by the main engine(s), geometrical characteristics of the propeller(s), etc.).