

Rules for the Certification of Rated Power of Diesel Propulsion Engines, when this is less than Maximum Continuous Power

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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 FOREWORD AND DEFINITIONS

1.1 Foreword

On the relevant certificates and in the Register Book, Tasneef indicates the power for which classification is requested for the propulsion engines of each ship (see Part C, Ch 1, Sec 1, [2.6] of the Rules for the Classification of Ships, hereafter referred to simply as “the Rules”).

For Diesel engines, this is the rated power defined in Part C, Ch 1, Sec 2, [1.3.2] of the Rules and included below in [1.2] b).

1.2 Definitions and abbreviations

- a) **Maximum continuous power** is the maximum power at ambient reference conditions (see Part C, Ch 1, Sec 2, [1.3.3] of the Rules) which the engine is capable of delivering continuously, at nominal maximum speed, in the period of time between two overhauls.
- b) **Rated power** is the maximum power in ambient reference conditions (see Part C, Ch 1, Sec 2, [1.3.3] of the Rules) which the engine is capable of delivering as set after the bench tests, at the maximum speed permitted by the governor (fuel stop power).
- c) **Rules** are the Rules for the Classification of Ships.

2 FIELD OF APPLICATION

These Rules apply, at the request of the Interested Parties, for the purposes of certification of the rated power of Diesel propulsion engines, if this is less than the maximum continuous power defined in Part C, Ch 1, Sec 2, [1.3.2] of the Rules and as per [1.2] a) above, and for which type testing has been requested in accordance with the foregoing Part C, Ch 1, Sec 2 of the Rules.

These Rules apply to new engines to be installed on board and existing engines already fitted and they apply to all vessels irrespective of whether they are built under the supervision of Tasneef.

In the case of engines built by manufacturers admitted to an alternative inspection scheme, the operations under items [3.1] b), [3.2] c), [3.2] d), [3.4] and [3.5] of the present rules, under items [4] and [5] of Appendix 1 and items [2] and [3] of Appendix 2 may be carried out by the Quality Control Service of the Manufacturer.

In these cases the Reports, signed by the Manufacturer, are to be reviewed anyway by the Tasneef Office which issues the test certificate of the engine.

3 DIESEL ENGINES FOR WHICH TYPE TESTING HAS BEEN REQUESTED IN ACCORDANCE WITH PART C, CH 1, SEC 2 OF THE RULES

3.1 At the request of the Interested Parties, Tasneef may certify a rated power less than the maximum continuous power ascertained at the bench tests during type testing, subject to certain requirements of the flag Administration, and to the following conditions a) and b).

- a) If the rated power requested is less than 75% of the maximum continuous power, the Manufacturer is to declare that the engine can operate correctly while providing continuous propulsion service, at the intended rated power, and to specify any modifications to be made to the engine itself, to its turbochargers and to its auxiliaries.
- b) The rated power less than the maximum continuous power is to be ascertained by a bench test, in the presence of a Tasneef Surveyor, on the engine intended for installation on board or on an identical engine, at the Manufacturer's works or those of another firm authorised by the Manufacturer.

3.2

- a) Where the test is conducted separately from the testing as per Part C, Ch 1, Sec 2, [4.5] of the Rules, it is to be of sufficient duration to be able to determine the main operational data of the engine and to check the factors that contribute to its setting (fuel injection and supercharging system, governor, setting parameters for the management software of the electronic control systems, etc) at the declared rated power.
- b) During the bench test it is to be verified that, with the intended setting, the engine cannot deliver power exceeding the declared rated power. To this end, for engines where the power reduction is obtained by acting on the injection pump group, the procedure in Appendix 1 is to be applied. Where the power reduction is obtained by acting on electronic integrated control systems, the procedure in Appendix 2 is to be applied. Other cases will be considered on a case-by-case basis by Tasneef.
- c) Once the operations as per a) and b) above have been completed, the setting devices that have been acted on to reduce the power are to be suitably sealed. This also applies to the governor, if it is independent.

In the case of electronic setting and/or electronic integrated control systems, the version of the setting software corresponding to the reduced power is to be clearly identified in the presence of a Tasneef Surveyor and access to the software on the part of unauthorised personnel is to be prevented.

d) Upon completion of the bench test, the Tasneef Surveyor draws up a report indicating the main operational data (exhaust gas temperature, fluid temperature, fuel consumption, etc) and the parameters which, after setting, have changed with respect to those corresponding to the maximum continuous power. More specifically, the aforementioned report indicates the:

- type and serial number of the engine
- maximum continuous power of the engine and corresponding rotational speed
- rated power of the engine and corresponding rotational speed
- specific consumption at the rated power
- type of injection pump and associated serial number
- position of the operating mechanisms that have been acted on to reduce the power or identification of the software for the electronic control system corresponding to the reduced power
- setup of the turbochargers
- intervention on the engine auxiliaries.

3.3 A copy of the report referred to in [3.2] (d) is to be kept on board for reference when, following work on the engines, it is necessary to reset them in accordance with the settings ascertained at the bench tests. This report is to be shown to Tasneef Surveyors upon request. In any event, the Owner is responsible for maintaining the engine in the certified setting condition.

3.4 For Diesel engines for which the power reduction is obtained by acting on the fuel injection pump group, where the bench test in [3.1] b) has already been conducted on an identical engine and the injection pump group has been tested at the pump bench as described in item [1] of Appendix 1, the setting of the engine intended for service on board may be carried out in the presence of a Tasneef Surveyor in accordance with item [3] of Appendix 1. On such occasion the Tasneef Surveyor confirms the setting and specifically indicates in the report the serial numbers of the engine and the injection pump group; a copy of the power reduction report for the identical engine of reference is attached to the test report.

3.5 For electronically controlled Diesel engines for which the power reduction is obtained by acting on the electronic controls of the injectors (for common-rail systems, or those with electronically controlled injectors), where the bench test in [3.1] b) has already been conducted on an identical engine and the details of the control software have been checked, as

stipulated in item [3] of Appendix 2, the check of the engine setting may be carried out in the presence of a Tasneef Surveyor in accordance with item [2] of Appendix 2.

4 EXISTING DIESEL ENGINES ON BOARD

The acceptance of rated power less than that already certified will be considered by Tasneef on a case-by-case basis, taking account of the modifications proposed for the engine and/or the other parts of the propulsion system.

Certification of the aforementioned rated power will, in any event, be subject to the check to be carried out, in the presence of a Tasneef Surveyor, using procedures, methods and equipment deemed suitable by Tasneef.

5 CERTIFICATION

Appendixes 3 and 4 contain facsimile of power reduction report forms:

- a) Appendix 3: facsimile of the report form for the bench testing of an engine for which certification of rated power less than the maximum continuous power has been requested and for the bench testing of the associated injection pump group.
- b) Appendix 4: facsimile of the report form for the bench testing of an injection pump group intended for an engine for which certification has been requested of rated power less than the maximum continuous power already ascertained on an identical engine.

Appendix 1 - Diesel engines for which the power reduction is obtained by acting on the fuel injection pump group

1 Following the bench test as per [3.2] a) of these Rules, the injection pump group is tested at the bench and its delivery is measured at the governor regulating speed corresponding to that stipulated for the rated power of the engine, this being less than the maximum continuous power.

Specifically, it is to be verified that, when the rotational speed (governor regulating speed) for which the engine has been set is exceeded, the pump delivery drops abruptly.

The above applies to engines that have an injection pump group with governor incorporated. In the case of an independent governor, the rapid drop in pump delivery is to be ensured by calibrating the governor itself.

2 In addition to the data specified in [3.2] d) of these Rules, the test report is to state the:

- pump delivery and associated governor regulating speed;
- type of pump test bench and characteristics of the fluid used;

It is also to be specified that, under test conditions, when the governor regulating speed is exceeded, the pump delivery drops abruptly.

3 If bench testing of the engine and the pumps has already been conducted on an engine identical to the one to be certified (see [3.4]), the setting of the engine that is to be installed on board may be carried out at the bench using the associated injection pump group and setting it so as to reproduce the conditions in [1].

The test bench is to be suitable and certified, and the same type of fluid is to be used as for the pump group of the identical engine.

The variation between the rated power of the engine to be certified and the rated power of the identical engine is to be no greater than 3% of the rated power to be certified.

4 The injection pump group accordingly set and sealed is to be installed on the engine in the presence of a Tasneef Surveyor.

Where this is not possible, when the ship's certificates are updated the Tasneef Surveyor will verify that the relevant pump group has been installed on the engine.

5 After any repairs and/or maintenance operations which make it necessary to reset the injection pump group, the procedure as per [3] and [4] of this Appendix, required for engine resetting, is to be performed in the presence of a Tasneef Surveyor.

Appendix 2 – Additional checks for Diesel engines fitted with electronic control systems

1 The Manufacturer is to submit to Tasneef the following documents, which, with the exception of the information in c), are to be attached to the test report:

- a) Specifications of the electronic control system installed on the engine (type, Manufacturer, etc)
- b) specifications of the associated software (type, revision index or date, identification code corresponding to the rated power requested)
- c) list of the software parameters which can be acted on to modify the setting of the engine and the current values of these parameters corresponding to the rated power requested.

2 Once the rated power requested has been determined as specified in [3.2] of these Rules, on the basis of this documentation the Tasneef Surveyor will verify that the rated power of the engine that has just been ascertained corresponds to the setting software (identification code and parameters).

3. The Tasneef surveyor will also verify that the software can only be accessed by authorised personnel using a password.

4 In general, devices intended to obtain a power reduction by restricting the movement of the mechanical part (accelerator) or accessible devices enabling variation of the setting (i.e. connectors with the possibility of switching) will not be allowed.

Appendix 3 – Copy of the report form for the bench testing of a Diesel engine for which rated power less than the maximum continuous power has been requested and for the bench testing of the associated injection pump group

OFFICE OF

Following the request dated..... from on in a bench test was carried out at the test bench of the Company on the engine model, serial no. (whose specifications are given in Enclosure A) intended for the M/V RI :...../intended for stock (1) for the purpose of determining the declared rated power of kW at rpm, less than the maximum continuous power ofkW at rpm.

On in at the test bench of the Company the injection pump of the above engine was tested to measure its delivery.

1) Engine bench test operations – preliminary checks

The test room is fitted with the necessary facilities and equipment in order to conduct the tests. It was checked that the above equipment is identified and calibrated, and the relevant calibration records were verified. For power measurement, a dynamometer type serial no., previously calibrated in the presence of a Tasneef Surveyor/calibrated on as per the attached calibration report (Enclosure B) (1) was used. It was checked that the normal essential auxiliaries are driven by the engine.

2) Engine bench test – operations performed

The engine was bench tested at the declared rated power of kW at rpm and the operational data were recorded as per Enclosure C. Upon completion of the test, the parts which were acted on in order to set the power were sealed in compliance with the provisions of the Rules for the Certification of Rated Power of Diesel Propulsion Engines, when this is less than Maximum Continuous Power, as follows:
a) Power reduction obtained by acting on the injection pump group
The seals, injection pump group and speed governor (2) were stamped by the Tasneef Surveyor (3).
b) Power reduction obtained by acting on the electronic control systems
It was verified by the Tasneef Surveyor (3) that the software can only be accessed by authorised personnel using a password.
In case a) the injection pump was disassembled from the engine for testing at the pump bench.

3) Pump group bench test – preliminary checks

The test room is fitted with the necessary facilities and equipment in order to conduct the tests. The pump test bench used has been previously calibrated in the presence of a Tasneef Surveyor/calibrated on..... as per the attached certificate (Enclosure D) (1).

Notes:

- (1) Delete as applicable
- (2) Delete if the governor is not independent
- (3) This operation may be carried out by the Quality Control Service of the manufacturer if the manufacturer is admitted to an alternative inspection scheme

Appendix 3 – Copy of the report form for the bench testing of a Diesel engine for which rated power less than the maximum continuous power has been requested and for the bench testing of the associated injection pump group

4) Pump group bench test – operations performed

The pump, sealed as specified in item 2, was tested on the pump bench with the following specifications:

Manufacturer Model serial no.

Fuel spray nozzles Setting pressure MPa

Nozzle spring type

Pipe size

The test fluid type, with viscosity of cSt, was the same as that used during the engine bench test as per item [2].

The curve in Enclosure E, indicating the average pump delivery as a function of the variation of the rotational speed of the pump in a range around the governor regulating speed, was recorded and it was ascertained that, under the test conditions, once the governor speed is exceeded, the pump delivery drops abruptly.

Upon completion of the test, the pump group was stamped with the serial number of the engine for which it is intended; when updating the ship’s certificates, it will be the responsibility of the Surveyor in charge to check that the pump group concerned has been installed on the engine.

A copy of this test report is to be kept on board and used for reference when, following work on board, it is necessary to reset the engines in accordance with the settings ascertained at the bench tests. This report is to be shown to inspection bodies upon request.

In any event the Owner is responsible for maintaining the engine in the certified setting condition.

After any repairs and/or maintenance operations which make it necessary to reset the injection pump group, the engine resetting is to be performed in the presence of a Tasneef Surveyor (3).

Manufacturer/Company

.....

Place and date

Tasneef

Witnessed

Reviewed

The following enclosures are attached to this report:

- A) engine specifications declared by the Manufacturer
- B) dynamometer calibration record
- C) list of operational data recorded during the bench test
- D) pump bench calibration record
- E) injection pump delivery curve recorded as a function of speed

Notes:

- (1) Delete as applicable
- (2) Delete if the governor is not independent
- (3) This operation may be carried out by the Quality Control Service of the manufacturer if the manufacturer is admitted to an alternative inspection scheme

Appendix 3 – Copy of the report form for the bench testing of a Diesel engine for which rated power less than the maximum continuous power has been requested and for the bench testing of the associated injection pump group

ENGINE SPECIFICATIONS

Engine	Model.....
Declared rated power.....kW	Rotational speed.....rpm
Cycle.....	2 or 4 stroke.....
Cylinder bore.....mm	Piston stroke.....mm
Number of cylinders.....	Inline or V type.....
Engine cooling.....	Turbocharged (yes or no).....
Intermediate cooling (yes or no).....	
Injection pump: Manufacturer.....	Model.....
Plunger bore.....mm	Injection advance°
Injectors: Manufacturer.....	Model
Number and size of holes.....mm	Injection angle.....°
Setting pressure.....MPa
Turbochargers: Manufacturer.....	Number, model and setup.....
Speed governor: Manufacturer.....	Model.....

Appendix 3 – Copy of the report form for the bench testing of a Diesel engine for which rated power less than the maximum continuous power has been requested and for the bench testing of the associated injection pump group

Test duration (min)	Power of the engine (kW)	Rotational speed of the engine (rpm)	Specific fuel consumption.. (g/kWh)	Ambient conditions			Position of pump control rod (1) (mm)	Temperature (°C)				Pressure	
				Pressure (kPa)	Temperature (°C)	Relative humidity (%)		Water	Oil	Exhaust gas	Oil	Exhaust gas	
								Raw water Inlet Outlet	Fresh water Inlet Outlet	Cooling of oil Inlet Outlet	Turbo-charger Inlet Outlet	Filter Inlet Outlet (MPa)	Exhaust back pressure (kPa)

Manufacturer/Company

.....

Place and date.....

Tasneef

Witnessed

Reviewed

(1) In the case of engines for which the power reduction is obtained by acting on the fuel injection pump group.

Appendix 4 – Copy of the report form for the bench testing of an injection pump group intended for a Diesel engine for which rated power has been requested less than the maximum continuous power already ascertained on an identical engine

OFFICE OF

Following the request dated..... from on in a bench test was carried out at the pump test bench of the Company on the injection pump model, serial no., intended for the engine model, serial no., with rated power of kW at rpm, intended for the M/V RI :...../intended for stock (1).

1) Pump group bench test – preliminary checks

The test room is fitted with the necessary facilities and equipment in order to conduct the tests.
The pump test bench was the same type as that used to record the pump delivery curve in Enclosure C), which is part of report no. dated issued by the Tasneef Office of
The pump test bench used was previously calibrated in the presence of a Tasneef Surveyor/calibrated on as per the attached calibration report (Enclosure B) (1).

2) Pump group bench test – operations performed

The injection pump was tested on a pump test bench with the following specifications:
Manufacturer Model serial no.
Fuel spray nozzles Setting pressure MPa
Nozzle spring type
Pipe size
The test fluid type, with viscosity of cSt, was the same as that used at the time of the previous request for certification of the above-mentioned performance for an engine of the foregoing type.
Using as reference the pump delivery curve recorded at the time of the previous request for certification of performance within the range +/- 3 % of kW at rpm for the above engine – see Enclosure C) – the pump was set with the same delivery values.
It was verified that, under test conditions, when the governor regulating speed is exceeded, the pump delivery drops abruptly.
Upon completion of the test the injection pump group was sealed with double metallic seals.
The seals, injection pump group and speed governor (2) were stamped by the Tasneef Surveyor (3).
The pump group was installed on the engine/was stamped with the serial number of the engine for which it is intended (1); when updating the ship's certificates, the Surveyor in charge will check that the pump group concerned has been installed on the engine.
A copy of this test report is to be kept on board and used for reference when, following work on board, it is necessary to reset the group in accordance with the settings ascertained at the bench tests. This report is to be shown to inspection bodies upon request.

Notes:

- (1) Delete as applicable
- (2) Delete if the governor is not independent
- (3) This operation may be carried out by the Quality Control Service of the manufacturer if the manufacturer is admitted to an alternative inspection scheme

Appendix 4 – Copy of the report form for the bench testing of an injection pump group intended for a Diesel engine for which rated power has been requested less than the maximum continuous power already ascertained on an identical engine

In any event the Owner is responsible for maintaining the engine in the certified setting condition.
After any repairs and/or maintenance operations which make it necessary to reset the injection pump group, the engine resetting is to be performed in the presence of a Tasneef Surveyor (3).

Manufacturer/Company

.....

Place and date

Tasneef

Witnessed

Reviewed

The following enclosures are attached to this report:

- A)** engine specifications declared by the Manufacturer
- B)** pump bench calibration record
- C)** injection pump delivery curve recorded as a function of speed

Notes:

- (1) Delete as applicable
- (2) Delete if the governor is not independent
- (3) This operation may be carried out by the Quality Control Service of the manufacturer if the manufacturer is admitted to an alternative inspection scheme

Appendix 4 – Copy of the report form for the bench testing of an injection pump group intended for a Diesel engine for which rated power has been requested less than the maximum continuous power already ascertained on an identical engine

ENGINE SPECIFICATIONS

Engine	Model
Declared rated power.....kW	Rotational speed.....rpm
Cycle.....	2 or 4 stroke.....
Cylinder bore.....mm	Piston stroke.....mm
Number of cylinders.....	Inline or V type.....
Engine cooling.....	Turbocharged (yes or no).....
Intermediate cooling (yes or no).....	
Injection pump: Manufacturer.....	Model.....
Plunger bore.....mm	Injection advance°
Injectors: Manufacturer.....	Model
Number and size of holes.....mm	Injection angle.....°
Setting pressure.....MPa
Turbochargers: Manufacturer.....	Number, model and setup.....
Speed governor: Manufacturer.....	Model.....