CLASS PROGRAMME

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DNV GL type approval scheme
FOREWORD

DNV GL class programmes contain procedural and technical requirements including acceptance criteria for obtaining and retaining certificates for objects and organisations related to classification.

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SECTION 1 GENERAL

1 Introduction
The DNV GL Type Approval (TA) scheme is a procedure by which the Society confirms compliance with rules for standard designs and/or routinely manufactured, identical components. Type approval can be applied to:

— materials
— products
— groups of products
— systems

TA may be used as an alternative to a case by case design approval when the material, product or system are intended for DNV GL classed vessels, see Standard for Certification 1.1. For certain product, as defined in the applicable chapters of the DNV GL Rules, TA is a mandatory procedure for confirming compliance with the Rules.

2 Objective
The objective of this publication is to give a description of the DNV GL Type Approval scheme including some of the principles behind these.

A type approval which is not based upon the DNV GL rules is called Type Examination (TE). When DNV GL carries out a type examination, a TE certificate is issued. However, the scheme for TE follows otherwise the same principles as described for TA in this document.

Guidance note:
Additional requirements may be listed in the relevant DNV GL class programmes.

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3 Scope
The scope of DNV GL TA will normally include the following activities:

— Survey (initial/renewal)
— Type testing
— Design assessment
— Issuance of a type approval certificate

4 Standards used for type approval
Requirements to be used as the basis for a DNV GL TA are found in the following standards and are hereafter referred to as DNV GL Rules:

— DNV GL Rules for Classification, and/or
— DNV GL Class Guidelines and Programs, and/or
— DNV GL Standards.

DNV GL TE can be delivered for approval based on other requirements such as

— International Standards
— Country Standards
— Industry Standards

Guidance note:
Standards used as basis for DNV GL TE are in general not evaluated for compliance with DNV GL rules.

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5 Abbreviations

CMC = Certification of Materials and Components
MR = Mutual Recognition
PQA = Production Quality Assurance
RO = Recognized Organisation
TA = DNV GL Type Approval
TE = DNV GL Type Examination
SECTION 2 WHO CAN OBTAIN TYPE APPROVALS

1 Conditions for type approval

1.1 Formal conditions for a company applying for a DNV GL TA

A TA Certificate can be issued to the manufacturer of the product or to a company placing a product on the market under this company’s name and thus presenting the company as the manufacturer of the product even if the designing and/or manufacturing and/or assembly are partly or fully subcontracted or licenced to other companies, provided:

— the company is the owner of the design, or have a written acceptance from the owner of the design that the TA Certificate can be issued in the name of the company
— the company takes the sole responsibility for the conformity of the product to the applicable requirements
— information about which other companies that are allowed to / given responsibility for designing, manufacturing or assembling the product is made available when TA is applied for
— the company accepts the conditions for periodical assessments for retention of the TA Certificate and possible suspension or withdrawal of the TA Certificate. This includes the DNV GL surveyor’s access to the company’s premises as well as the premises of other companies that are manufacturing the type approved products

1.2 Technical conditions for DNV GL TA

— There must be specific and applicable design requirements for the product in question in the DNV GL rules that are fulfilled and that can form the basis for the TA

1.3 Technical conditions for DNV GL TE

— There must be specific and applicable design requirements for the product in question in the referred standard that are fulfilled and that can form the basis for the TE
SECTION 3 HOW TO OBTAIN TYPE APPROVAL

1 Application for type approval

The TA shall be applied for in writing at the local DNV GL office. A DNV GL application form for TA shall be filled in and submitted to DNV GL. The application form is available from any DNV GL office.

The application shall include a declaration from the company that the product for which TA is applied is 100% free from asbestos.

Information about which other companies that are allowed to or given the responsibility for designing, and/or manufacturing and/or assembling the product shall be attached the application for TA. Any changes or additions with respect to other companies involved shall be continuously reported.

1.1 Quotation

A quotation for TA can be obtained on request.

2 Documentation requirements

In order to carry out the design assessment, requested information and documentation need to be submitted to the DNV GL local office.

The needed and required information and documentation for specific products are listed in the class program forming the basis for the type approval.

The general documentation required, but not limited to, for all TA applications are given as follows:

- application for TA
- main drawings of product / system (or other equivalent documentation)
- design calculations (if any)
- documentation of reliability by calculation and / or in service experience (if required)
- information regarding the manufacturer’s type designation marking (or other marking) of the product for unambiguous identification of the product with reference to technical specifications
- specification of materials applied
- operating characteristics
- type testing programme
- type testing report
- proposed field of application and operational limitations
- functional description
- report from initial assessment

- The documents are to be submitted electronically to the local DNV GL office. If documentation is submitted in paper format, normally two copies of the documentation shall be submitted to the local DNV GL office. No documentation will be returned to the company applying for TA.
- The documentation that forms the basis for the TA shall be available for DNV GL surveyors at the TA applicant’s premises.

English language shall be used in the documentation.

3 Initial assessment

When a TA is applied for, an initial assessment will have to be carried out by DNV GL in order to confirm that the TA applicant has a quality system in operation ensuring consistent production of the products for which the TA is requested. The initial assessment normally includes a visit/survey at the manufacture.

A report will be made after the initial assessment, and this report shall be part of the TA documentation.
4 Type testing

The main objective of type testing is to verify the ability of a material, product or system to meet requirements that cannot be verified by analyses and calculations with reasonable reliability.

The type testing shall be carried out on specimens or products representative of the production. This means that the samples or products are to be made in conformity with the submitted documentation and by the use of tools, methods and processes in the normal production.

The type testing can be carried out at the TA applicant's premises when suitable facilities and qualified personnel are available to undertake the testing required. The testing shall be carried out as described in the DNV GL Rules and witnessed by a DNV GL surveyor when required.

A type testing programme shall be worked out by the TA applicant, sent to the DNV GL local office and agreed upon prior to the commencement of the testing.

The test programme shall among others include information on which tests that shall be carried out in the presence of the DNV GL surveyor. Further, the test programme shall define the acceptance criteria for the testing.

Upon completion of the testing, the TA applicant shall prepare a test report. The test report with an identification number must contain all relevant data and test results. Where applicable its contents should comprise the following specified items:

— place and date of the tests, the names of the responsible personnel carrying out the test
— type references and serial numbers of the products tested
— description of the specimens and method used
— test specifications
— test procedure
— listing of the test and measuring instruments used (type references, serial numbers, evidence of sufficient accuracy) or the evidence of accredited laboratory
— environmental conditions during the tests
— test results, test records
— explanatory notes on any faults which may have occurred, and the remedial measures taken

The report shall be sent to the DNV GL local office for endorsement. The type testing report is considered to be part of the TA documentation.

When agreed, type testing may be carried out by independent laboratories recognized for the kind of type testing that is required for the products in question. DNV GL may base its acceptance on the test reports issued by the recognized laboratory confirming compliance with the requirements.

5 Assessment of documentation

DNV GL assesses the documents to verify conformity with DNV GL Rules in force at the time of the order and suitability of the product for a type approval and the range of application.

6 Type approval certificate

A TA certificate will be issued and sent to the TA applicant when compliance with the requirements to the product is confirmed. The certificate will be in electronic format and digitally signed.

The digitally signed electronic TA certificate is the original of the certificate, and any paper version of the certificate is a copy.

All valid TA certificate will be listed on the internet site Approval Finder http://approvalfinder.dnvgl.com.

The difference between a DNV GL Type Approval Certificate and a Product Certificate should be noted.

Note:

A DNV GL Type Approval Certificate states that the design of a product type is in conformity with specified requirements. The certificate is valid for a specified period of time.
A Product Certificate issued by the Society states that a manufactured product is in conformity with specified (design and production) requirements. A product certificate is issued for a manufactured product and is stating conformity with the specified requirements at the time of issue of the Product Certificate.

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6.1 Validity

When a DNV GL TA Certificate is issued, it will for most of the products be valid for five years. For products frequently subject to changes in design and/or materials, or for products where relevant in-service experience must be available, the validity will be limited to two years. Finalized production within the certificate validity period is basis for accepting use of the TA certificate on the given product. The TA certificate confirms compliance with the DNV GL Rules in force at the time of certificate issuance.

7 Documenting compliance with the type approval

Products complying with the type approval shall either be marked with reference to the TA, see Sec.7 [1], or be accompanied by a works certificate referring to the TA certificate, see Sec.7 [2].

7.1 Documenting compliance with the TA by marking of the product

Products that comply with the type approval shall be marked for traceability to the type approval. The marking shall be affixed to the product or to its data plate so as to be visible, legible and indelible throughout the anticipated useful life of the product. However, where that is not possible or not warrantable on account of the nature of the product, it shall be affixed to the packaging of the product, to a label or to a leaflet. The product or its packing shall as a minimum be marked with the company's name, trade mark and the same type designations as given in the TA certificate for traceability. The marking shall be permanent and unique.

The marking shall be performed by the company holding the TA, or his authorized representative, at the end of the production phase. By this, the company holding the TA confirm compliance of the product with the applicable requirements and any conditions of the TA and that the type approval was valid at time of affixing the marking.

7.2 Documenting compliance with the TA by issuing a works certificate

Certifying the conformity of the product with the applicable requirements and any conditions of the TA may be performed through issuing a works certificate. The works certificate shall as a minimum include the TA number, the type designation as given in the TA, the marking of the product and the date of issuing the certificate. There shall be an unambiguous traceability between the works certificate and the product through marking of the product and reference to that marking in the works certificate. The marking shall be affixed to the product or to its data plate so as to be visible, legible and indelible throughout the anticipated useful life of the product. However, where that is not possible or not warrantable on account of the nature of the product, it shall be affixed to the packaging of the product, to a label or to a leaflet. The works certificate shall be issued by the holder of the type approval certificate, or his authorized representative, at the end of the production phase. By this, the company holding the TA confirm compliance of the product with the applicable requirements and any conditions of the TA and that the type approval was valid at time of issuing the works certificate.
SECTION 4 PERIODICAL ASSESSMENTS FOR RETENTION OF THE TYPE APPROVAL CERTIFICATE

A condition for retention of the TA certificate in its validity period is that periodical assessments are successfully carried.

The objective of the periodical assessment is to verify that the conditions for the TA have not been altered. The main scope of the periodical assessment will normally include:

— verification of the TA applicant’s production and quality system w.r.t. ensuring continued consistent production of the type approved products at the TA applicant’s own premises and at other companies that are given the responsibility for manufacturing of the products
— review of the TA documentation and that this is still used as basis for the production
— review of possible changes to the design, the material and the performance of the product
— verification of the product marking

Periodical assessments will be carried out bi-yearly. For TA of welding consumables the periodical assessments will be carried out yearly. When possible, this assessment may be harmonised with normal surveys for product certification and / or other surveys and audits carried out.

Unscheduled assessments for retention of the certificate may be carried out when there is reason to believe that the TA applicant has not adhered to the obligations stipulated in the TA certificate.

In cases where the type approved product is manufactured at other companies periodical assessments shall be carried out randomly at these companies. All companies shall be assessed at least once in the period of validity of the TA certificate.

1 Modifications of the product

DNV GL shall be informed of any modifications to the product which are liable to affect its characteristics and functions, as originally specified and tested. This includes shifting of the production site or manufacturing under licence. If such notification is not made, the validity of the type approval certificate terminates.

Where the nature or extent of the modifications makes it necessary to retest the product, the client will be requested to take necessary actions.

2 Change of production site / additional production site

DNV GL shall be informed of any shifting of the production site and any additional production site. If such notification is not made, the validity of the type approval certificate terminates.

Evidence has to be given to DNV GL that the quality related actions in the production and the products meet the specifications laid down. DNV GL reserves the right to examine this in the manufacturer's work.
SECTION 5 RENEWAL OF TYPE APPROVAL CERTIFICATE

1 General

A Type Approval Certificate may be renewed for a further period of validity, at the customer’s request. An application for renewal shall be submitted to the DNV GL local office.

If there are any changes to the product design, the design documentation and/or the TA certificate, information about this and revised documentation shall be enclosed the application sent to the DNV GL local office.

When the application for renewal is received, an assessment for renewal of the certificate will be carried out and constitute some of the basis for the renewal.

The renewal of the TA will be based on the current requirements of the DNV GL rules being the basis for the TA.

When all steps in the renewal process have been completed satisfactorily, a new TA certificate will be issued and sent to the TA applicant.

The listing of the type approved products on the Internet will be updated when the renewed TA certificate has been issued.
SECTION 6 SUSPENSION AND WITHDRAWAL OF TYPE APPROVAL CERTIFICATES

1 General

If DNV GL finds it justified, a TA certificate may be suspended or withdrawn at any time. Suspension/withdrawal of a certificate may take effect immediately or after a specified period of time. In special cases the suspension/withdrawal of a certificate may be made with retroactive effect. When a TA certificate is suspended/withdrawn, DNV GL will notify the company holding the certificate and the company holds the responsibility to inform their customers as relevant.

In case of suspension, modifications and re-qualification of the product is called for within a given time window in order to maintain the TA certificate. If relevant corrective actions are not carried out to the satisfaction of the Society, the certificate will be withdrawn.

If a TA certificate is suspended/withdrawn, this will have no retroactive influence on the fee initially charged for the TA.
SECTION 7 EU RO MUTUAL RECOGNITION (MR) TYPE APPROVAL

The EU RO MR Type Approval scheme is a procedure for type approval of certain products that can be accepted for installation onboard vessels on the basis of the EU RO MR Type Approval only. This Type Approval scheme can only be used for products that are agreed by the EU ROs. When a product has got an EU RO MR Type Approval from DNV GL, the product shall be accepted for installation onboard vessels classed by any of the EU RO.

For more information, see the EU RO mutual recognition group http://www.euromr.org/

1 Technical conditions

— The product for which TA is requested must be on the list of products that EU RO has agreed can be mutually accepted on the basis of Type Approval only. The product must fulfil the agreed technical requirements for mutual recognition established by the EU ROs.

2 Standards use

The specific requirements that shall be used as basis for the EU RO MR Type Approval have been established by the EU ROs. The requirements are described in DNV GL Class Guidelines and Programs.

3 Scope

The scope of the EU RO MR TA scheme will normally include the following activities:

— design assessment of documentation
— type testing of the product
— approval of the company’s Production Quality Assurance (PQA) scheme
— issuance of EU RO MR Type Approval certificate
— Further details on design assessment of documentation and type testing of the product are given in Sec.3.

3.1 Production Quality Assurance (PQA) scheme

When an EU RO MR TA is applied for, an approval of the applicant’s PQA scheme shall be carried out. The approval will include:

— a review of the PQA documentation
— an assessment of the implementation of the PQA scheme.

The PQA documentation shall include:

— relevant product information
— listing and information of manufacturing/production sites other than the TA applicant site
— documentation of the quality management system and its certification

The purpose of the review of the PQA documentation is to determine whether the described PQA scheme gives reasonable confidence that the concerned products can be consistently produced in compliance with the type of product covered by the design assessment documentation.

The purpose of the assessment of the PQA scheme is to determine whether it is implemented and operated as described. Assessment of implementation shall be done at the TA applicant’s premises and at manufacturing/production sites other than the TA applicant’s site.

When the review and assessment have been finished, a PQA approval report will be made and sent to the TA applicant.

The type testing and approval of the company’s PQA should preferably be carried out in parallel with the design assessment.
3.2 Validity
When an EU RO MR Type Approval Certificate is issued, it will be valid for maximum 5 years.

3.3 Periodical assessment
In order to retain the EU RO MR Type Approval certificate through the period of validity, periodical assessments shall be carried out annually.

The purpose of the periodical assessment is to verify that the TA applicant maintain and duly fulfils the obligations arising out of the approved PQA scheme.

The main scope of the periodical assessment will be:

— review of the PQA scheme documentation
— review of the Design assessment documentation in order to verify that this is still basis for the production and if there are any changes to design, materials and performance of the products
— review of quality records
— inspection/assessment to verify that manufacturing and assembling of the products are in line with the PQA documentation
— verification of inspection and testing of the products
— verification of storage and handling of sub-suppliers
— verification of how quality and consistent production are ensured at manufacturing/production sites other than the TA applicant site
— verification of product marking and identification
— witness additional testing as required by the technical requirements.

Unscheduled periodical assessments may be carried out when there are reasons to believe that the TA applicant has not adhered to the obligations stipulated in the TA certificate.

In those cases the type approved product is manufactured at companies other than the TA applicant, periodical assessments shall be carried out randomly at these companies. All companies shall be assessed at least once in the period of validity of the TA certificate.

An assessment report shall be made and submitted to the TA applicant when the periodical assessment has been carried out.

3.4 Renewal of certificate
At the end of the validity period, a renewal of the EU RO MR Type Approval certificate may be applied for. The procedure for renewal of certificate is described in Sec. 5.

For Suspension and Withdrawal of Type Approval Certificates, see Sec. 6.
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