



CERTIFICATION NOTES

No. 2.9

Type Approval Programme No. 5-741.10-1

TYPE APPROVAL PROGRAMME FOR BOILERS

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DET NORSKE VERITAS

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FOREWORD

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DET NORSKE VERITAS AS (DNV AS), a fully owned subsidiary Society of the Foundation, undertakes classification and certification and ensures the quality of ships, mobile offshore units, fixed offshore structures, facilities and systems, and carries out research in connection with these functions. The Society operates a world-wide network of survey stations and is authorised by more than 120 national administrations to carry out surveys and, in most cases, issue certificates on their behalf.

Certification Notes

Certification Notes are publications which contain principles, acceptance criteria and practical information related to the Society's consideration of objects, personnel, organisations, services and operations, in connection with issuance of certificates or declarations, which are not necessarily related to classification.

An updated list of Certification Notes is available on request. The list is also given in the latest edition of the Introduction-booklets to the "Rules for Classification of Ships", the "Rules for Classification of Mobile Offshore Units" and the "Rules for Classification of High Speed and Light Craft".

In "Rules for Classification of Fixed Offshore Installations", only those Certification Notes which are relevant for this type of structure have been listed.

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1. Scope

Type Approval is a procedure for certifying that the design of a product type is in conformity with a set of predetermined requirements.

This Type Approval Programme contains the requirements on which Det Norske Veritas normally bases its Type Approval of boilers.

The requirements are based on the Rules for Classification of Ships and Mobile Offshore Units.

The procedure for assessment of conformity of manufactured products (production) is not part of the scope of the Type Approval Programme.

2. Conformity Assessment of Design of Product Type

2.1 Procedure

The Type Approval procedure consists of the following elements :

- design assessment
- type testing
- certificate retention survey

2.2 Documents to be submitted

Drawings and data showing all design details and materials are to be submitted in triplicate.

Drawings, design calculations and data to be submitted are listed in Pt.4, Ch.3, Sec.1,C in the Rules for Classification of Ships.

2.3 Material requirements

Materials are to comply with DNV Rules Pt.2, with additional requirements given in Pt.4 Ch. 3 Sec.2.

Alternatively, other specifications such as national standards, international standards etc. may be used as a basis for Type Approval. If this shall apply, the full specification is to be submitted. It must describe all relevant requirements and the testing.

2.4 Design requirements

The design of the boiler will be evaluated with regard to DNV requirements as given in the Rules Pt.4 Ch.3.

2.5 Requirements to identification of product type with certificate

The product is to be provided with visible marking, giving at least the following information:

- manufacturer's name or trade mark
- technical data necessary for the application

- type designation under which the product is type approved

The marking is to be carried out in such a way that it is visible, legible and indelible throughout the anticipated life of the product, and that the marks can be traced back to the Type Approval Certificate.

2.6 Elements of Type Approval

2.6.1 Design assessment

The design assessment is carried out to assess that the design of the product type is in conformity with given design requirements stated in item 5.

2.6.2 Type testing

The main objective of the Type Testing is to verify properties which cannot be verified by analyses or calculations with reasonable reliability.

The boiler will therefore have to meet specified test requirements.

Type testing is to be carried out on one or more boilers that are representative of the production.

The testing is to be performed in accordance with an established test programme which the client and DNV have agreed upon prior to the commencement of the testing.

Type testing can comprise:

- production weld tests
- NDT
- hydraulic testing

2.6.3 Type Approval Certificate

When the design assessment and type testing are successfully completed a Type Approval Certificate will be issued to the manufacturer stating conformity of the design of the product type.

The Certificate is given a validity period of normally 4 years.

2.7 Certificate retention survey

The scope of the certificate retention survey is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the boiler design or choice of materials.

The frequency and content of the surveys will be stated in the Type Approval certificate.

The surveys will usually take place at time of renewal of the type approval and thus constitute a basis for the renewal.

If regular DNV product certification of boilers takes place during the validity period of the Type Approval Certificate, the Type Approval Certificate retention survey can be combined with the product certification survey.

The main elements of the certificate retention survey are :

- witness of tests or inspection of the product, selected at random from the production line to see that the same test results are obtained as at initial testing
- review of type approval documentation
- review of possible changes in design, materials and performance.
- ensure traceability between manufacturer's marking and Type Approval Certificate.

2.8 Renewal of Type Approval Certificate

At least three months before the period of validity expires, the certificate-holder has to apply for renewal of the certificate.

Upon receipt of the request for renewal, Det Norske Veritas will perform a renewal survey which has the same content as the certificate retention survey stated in item 7.4.

The survey report will constitute the basis for the Type Approval and the issuance of a new certificate.

3. Conformity Assessment of Manufactured Products (Production)

3.1 Product Certificates

Each boiler is to be delivered with a product certificate when intended for use on board a DNV classed vessel.

The requirements to inspection and testing are laid down in the Rules Pt. 4 Ch.3 Sec.8.