STANDARD FOR CERTIFICATION

No. 2.9

Type Approval Programme 847.10

WINDOW WIPERS

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FOREWORD

DET NORSKE VERITAS is an autonomous and independent Foundation with the objective of safeguarding life, property and the environment at sea and ashore.

DET NORSKE VERITAS AS is a fully owned subsidiary Society of the Foundation. It undertakes classification and certification of ships, mobile offshore units, fixed offshore structures, facilities and systems for shipping and other industries. The Society also carries out research and development associated with these functions.

DET NORSKE VERITAS operates a worldwide 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.

Standards for Certification

Standards for Certification (previously Certification Notes) are publications that contain principles, acceptance criteria and practical information related to the Society's consideration of objects, personnel, organisations, services and operations. Standards for Certification also apply as the basis for the issue of certificates and/or declarations that may not necessarily be related to classification.

A list of Standards for Certification is found in the latest edition of the Pt.0 of the ”Rules for Classification of Ships”, and the ”Rules for Classification of High Speed, Light Craft and Naval Surface Craft”.

The list of Standards for Certification is also included in the current “Classification Services – Publications” issued by the Society, which is available on request. All publications may be ordered from the Society’s Web site http://exchange.dnv.com. The list of publications is also available from this site.

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1. Scope

Type approval is a programme for certifying that a product type conforms with a set of predetermined requirements.

The requirements are based on IMO performance standards and IEC test standards.

The procedure for assessment of conformity of manufactured products (production) is not part of the scope for the type approval programme.

This type approval programme gives the requirements on which DNV normally bases its type approval of window wiper systems.

2. Conformity assessment of design of product type

2.1 Procedure

Type approval procedure consists of the following elements:

- design assessment
- type testing
- certificate retention survey.

2.2 Documents to be submitted

The documentation to be submitted by the manufacturer shall be clearly labelled and divided in such a way that all elements below can be easily identified.

The following documentation is to be submitted in triplicate:

1) Drawings showing the inter-relationship between all parts of the equipment including wiper, motor, control units.
2) Drawings, schematics and functional description necessary to describe all parts of the equipment (all parts required for obtaining the intended functionality).
3) Information on; test facilities, maintenance and periodical testing.
4) Drawings and picture of control units.
5) Power supplies including details on transformers, rectifiers etc.
6) Environmental test programme and results.
7) Performance test program and expected results.

Note
Manufacturer is to submit a proposal for performance test programme, including expected results. This is to be approved prior to performance type testing

8) Special operational limitations if any.
9) Operation and installation manuals.
10) Product marking.
11) Commissioning specification.

2.3 Design requirements

The window wiper system shall comply with relevant requirements of the following publications as amended:

- **IMO resolution A.813(19)** General requirements for electromagnetic compatibility for all electrical and electronic ship's equipment.
- **COLREG 72**
- **IEC Standard 60945** Maritime navigation and radio communication equipment and systems - General requirements - Methods of testing and required test results.
- **EN 50082-2** Electromagnetic compatibility. Generic immunity standard.

Publications may be obtained at:

- www.imo.org, IMO Publications
- www.iso.org, ISO Publications
- www.iec.ch, IEC Publications.

2.4 Requirements to identification of type of product with certificate

The manufacturer is to specify type, type number, model, etc., which completely identifies the product and its components according to drawings and equipment specification. All optional features for which type approval is requested are to be listed, either by separate type numbers or by suffixes to the equipment's basic type number.

All drawings and descriptions are to be marked with drawing reference number, item name, issue date, etc., which identify the documentation as such.

The final product shall be provided with visible marking, giving at least the following information:

- identification of manufacturer
- equipment type number or model identification
- serial number
- production year
- safe installation distance from magnetic compass
- power consumption and supply voltage.

2.5 Elements of type approval

2.5.1 Design assessment

Design assessment based on the documentation requested in 2.2 is to assess that the design of the product conforms with the rules and standards as described in 2.3.

Design assessment is carried out by a qualified DNV approval engineer to verify that the design of the product conforms with the design requirements.

Additional work e.g. comprehensive discussions, insufficient documentation, work not in accordance with the TA programme and underlying standards and regulations, meetings and travel will be charged on basis of the rate in force.

2.5.2 Type testing (TT)

When design assessment has been carried out by a qualified DNV approval engineer, Type testing according to an approved test programme, is to be carried out in the presence of a qualified surveyor from DNV.

Detailed test reports based on a relevant test programme and carried out in the presence of an independent surveyor from a recognised authority may be accepted.

The type testing is based on:

- visual inspection
- performance type testing
- environmental type testing.

2.5.2.1 Performance type testing

Tests are to be carried out to verify that the performance of the test sample conforms with the requirements of the rules and relevant IMO performance standards.

It is strongly advised that the manufacturer carry out the performance type testing based on the approved test programme, prior to the witnessed testing

2.5.2.2 Environmental type testing

Tests are to be carried out to verify that the test sample conforms with the requirements of relevant IMO performance standards. The tests shall comply with IEC 60945 as amended. The tests shall be documented by a signed test report from an accredited laboratory operated according to EN 45001 (or ISO 17025). The test report should be of a form as listed in EN45001, point 5.4.3 (or ISO 17025, point 5.10).

It is the manufacturer's responsibility to ensure that the environmental type testing is performed at an accredited laboratory accepted by DNV. A laboratory accepted by DNV with the presence of a qualified DNV surveyor might be used.

2.5.3 Routine tests (RT)

The routine tests, including commissioning tests on board, constitute the final production control and the manufacturers standard RT are to be described in the submitted documentation. These tests are normally carried out by the manufacturer or his representative unless otherwise is stated on the type approval certificate.

2.5.4 Type Approval Certificate

When the design assessment and type testing are successfully completed a type approval certificate will be issued to the manufacturer for the conformity of the design of the product type.

2.5.5 Certification retention survey

Certificate retention survey is required in front of renewal of type approval certificate. The objective is to verify that the product has not been altered with respect to design and functions covered by the type approval.

2.5.6 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, DNV will carry out a certificate retention survey as stated above.

The certificate retention survey report will constitute the basis for renewal of the type approval and the issue of a new certificate.

3. Appendix A - Table of Type Tests for Window Wipers

This appendix will be distributed upon request by contacting DNV Section for Nautical Safety and Communication Systems.