

CERTIFICATE NUMBER21-2157951-PDAEFFECTIVE DATE06-Sep-2021EXPIRATION DATE05-Sep-2026ABS TECHNICAL OFFICESingapore Engineering Services

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

WITT & SOHN AKTIENGESELLSCHAFT located at ZIEGELEIWEG 38, D-25421 PINNEBERG, GERMANY

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Fan, Ventilation System

Model Axial Fans - N, M, X, Y Centrifugal Fans - LRZ, LQZ, MRZ, MQZ, HRZ, HQZ, SRZ, RNN, RNZ, RSZ, PQZ, PRZ IGW Jet Cowl - DVX IGW Fungiform Cowl - PVX

This Product Design Assessment (PDA) Certificate remains valid until 05-Sep-2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

Vibin Chandrabose, Senior Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement

Electronically published by ABS Singapore. Reference T2157951, dated 06-SEP-2021.

> WITT & SOHN AKTIENGESELLSCHAFT ZIEGELEIWEG 38 D-25421 PINNEBERG Germany Telephone: 49-4101-7007-0 Fax: 49-4101-7007-30 Email: witt@wittfan.de Web: www.wittfan.de Tier: 2 - PDA Issued

Product:Fan, Ventilation SystemModel:Axial Fans - N, M, X, YCentrifugal Fans - LRZ, LQZ, MRZ, MQZ, HRZ, HQZ, SRZ, RNN, RNZ, RSZ, PQZ, PRZIGW Jet Cowl - DVXIGW Fungiform Cowl - PVX

Endorsements:

Intended Service:

Marine & Offshore Application - Non-sparking Fans utilized in Ventilation for Hazardous and Non-hazardous Areas

Description:

Radial and Axial Fans are utilized in Ventilation Systems for Hazardous and Non-Hazardous Areas

Rating:

Centrifugal Fan Series: Sizes: 100 - 1600 mm Volume Flow Rate: 50 - 100,000 m³/h

Axial Fan Series: Sizes: 250 - 3550 mm Volume Flow Rate: 500 - 1,000,000 m³/h

For detailed volume flow rate of each fan model, please refer to attached document.

Service Restriction:

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

1. The electric motors are excluded from this certificate. The electric motor is to be suitable for the intended location and details are to be submitted for each application. Motors for use in hazardous location have to be type tested and certified by a competent, independent testing laboratory as suitable for use in the specific hazardous atmosphere and a document to this effect is to be submitted.

2. Ventilation for hazardous and non-hazardous areas, each fan installed is to be specifically approved for that application based on ABS Rule requirements.

3. Protection screen of not more than 13 mm (0.5 in) square mesh are to be fitted in the inlet and outlet of ventilation ducts either by fan vendor or shipyard.

4. Type test on the finished product are to be carried out in accordance with an acceptable national or international standard.

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Document No. Fan Cowl - Technical Datasheets, Revision: -, Pages: 2 Document No. A99-10-4, Revision: -, Pages: 4 Document No. Centrifugal Fans - Technical Datasheets, Revision: -, Pages: 73 Document No. Product-Description_Fan-Cowls, Revision: -, Pages: 2 Document No. Product-Description_Axial-Flow-Fans, Revision: -, Pages: 34 Document No. Axial Fans - Technical Datasheet, Revision: -, Pages: 39 Document No. Product-Description_Centrifugal-Fans, Revision: -, Pages: 43 Electronically published by ABS Singapore. Reference T2157951, dated 06-SEP-2021.

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Terms of Validity:

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STANDARDS

ABS Rules:

ABS Rules for Conditions of Classification (2021) 1-1-4/7.7, 1-1-A3 and 1-1-A4, which covers the following : 2021 Rules for Building and Classing Marine Vessels: 4-8-3/11, 5C-8-12/1.7, 5C-13-13/3.3

2021 Rules for Conditions of Classification Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following: 2021 Rules for Building and Classing Mobile Offshore Units: 4-3-3/9.7

National:

NA

International: IACS Req. Rev.6 2005, F29.3.3 (iii) & (iv) Non-sparking fans.

Government: NA

EUMED: NA

OTHERS:

NA