Certificate No:
TAM000019Z

TYPE APPROVAL CERTIFICATE

This is to certify:

That the FANS

with type designation(s)
Centrifugal Fans Types, HRZ-HQZ, LRZ-LQZ, PRZ-PQZ, RNN-RNZ-RSZ, SRZ-SQZ, TZR

Issued to
Witt & Sohn AG
Pinneberg, Germany

is found to comply with
DNV rules for classification – Ships Pt.5 Ch.7 Liquefied gas tankers

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.
Max. working press.:
Operating media

Issued at **Hamburg** on **2022-07-27**
This Certificate is valid until **2027-07-26**.
DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Frank Poetsch**

for **DNV**

Olaf Drews
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Centrifugal fans
Types: HRZ-HQZ, LRZ-LQZ, PRZ-PQZ, RNN-RNZ-RSZ, SRZ-SQZ, TRZ

Design:	Centrifugal type
Medium:	Clean air
Installation:	In dry rooms (inlet air temp. between 0 and +45°C)
Inlet size:	63 - 1800
Casing thickness:	3,0 up to 12mm
Impeller types:	Impeller made of S235JR +N
Drive type:	Direct drive
Motor frame size:	63 up to 450

For explosion protection of electrical motors please see Application / Limitation below. Motor standard to be IEC 60034ff.

Application/Limitation

Note: Electrical motors shall be explosion proof in line with the applicable rules and standards and acc. to the requirements of the respective project.
All details about electrical explosion protection mentioned in this certificate are for information only. For relevant binding information the corresponding Certificate of Conformity with regard to electrical explosion protection, issued by a recognized Certification Body, shall be observed.
Application in hazardous areas are to be approved in each case in line with the Rules for Classification. Details mentioned in the Ex-Certification/ Special conditions for safe use acc. to a valid Ex-Certificate issued by a notified / recognised Certification Body are to be observed.

In case the fans fall within the validity of Directive 2014/34/EU - ATEX (not on seagoing vessels and mobile offshore units) the Conformity Assessment Procedure as described in in the ATEX documents must be followed:
For equipment of group II category 2- the motors must have an "EU Type Examination" and "Conformity of Type" or "Product AQ" must be assured, while for fans there must be provided "Internal Control of Production" and "Communicate a Technical Documentation to a Notified Body" (for Witt & Sohn AG, Reg.no:PTB 03 ATEX D076).

For equipment of group II category 3- there must be "Internal Control of Production". The documents of Conformity (IEC Declaration of Conformity) as per ATEX must be provided and fans and motors must be marked with CE and ATEX supplementary marking as per ATEX, showing, amongst others, the identification number of the Notified Body, where applicable.

Type Approval documentation

Tests carried out

Marking of product

Maker - Type – Size – Capacity - Serial No.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type Approval are complied with and that no alterations are made to the product design or choice of materials.
The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer’s product type marking and Type Approval Certificate.

Periodical assessments for type approvals with a validity period of five years will be required after two years (+/- 90 days) and after 3.5 years (+/- 90 days). The arrangement is to be in accordance with procedure described in Class Programme DNV-CP-0338 (2021), Section 4.

END OF CERTIFICATE