EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00005FS

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

That the Devices to prevent the passage of flame into the cargo tanks in tankers

with type designation(s)
High Velocity Pressure Valves VQBLUE P2/P3/P4/P5/P6, Deflagration Vacuum Valves VQBLUE V2/V3/V4/V5/V6

Issued to
Ventiq AS
GJERDSVIKA, Norway, Norway

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2020/1170,**
item No. MED/3.12. SOLAS 74 as amended, Regulation II-2/4 & II-2/16, IMO Res.MSC.98(73)-(FSS Code) 15

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2026-04-xx**.

Issued at **Høvik** on **2021-04-xx**

DNV local station:
Ulsteinvik

Approval Engineer:
Maheshraja Venkatesan

Notified Body
No.: **0575**

for **DNV AS**

Sverre Olav Bergli
Head of Notified Body

NORWEGIAN ACCREDITATION PROD 019

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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

High Velocity Pressure Valves (VQBLUE P2/P3/P4/P5/P6)
Spring and magnet operated pressure valve (end of line device) comprising of following parts and material of construction:

Body – pressure side	:	S235JR or AISI 316L
Body – side flange cover	:	S235JR or AISI 316L
Pressure fixture	:	AISI 316L
Test lever arrangement	:	AISI 316L
Pressure fixture gasket	:	NBR

Deflagration vacuum valves (VQ BLUE V2/V3/V4/V5/V6)
End-of-line deflagration flame arresters (vacuum valves with integrated gas feeing cover) equipped with a flame arrester element consisting of two wire mesh layers (Mesh 40/ thread 0.22mm) for all models except V6 where three layers of wire mesh with the following parts and materials of construction:

Body – vacuum side	:	S235JR or AISI 316L
Gas freeing and vacuum cover	:	S235JR or AISI 316L
Gas freeing fixture	:	AISI 316L

Products covered by this certificate are designed and tested according to:

- IMO MSC/Circ. 677 (as amended by MSC.1/Circ. 1324) Revised Standards for The Design, Testing and Locating of Devices to Prevent the Passage of Flame into Cargo Tanks in Tankers
- ISO 16852:2016: Flame arresters - Performance requirements, test methods and limits for use
- ISO 15364:2016: Standard for ships and marine technology – Pressure/vacuum valves for cargo tanks

Application/Limitation

Products covered by this certificate may be used as vents on tanks for cargo on board ships having class notation "Tanker for Oil", "Tanker for Oil Products" or "Tanker for Chemicals" carrying products having an MESG of 0.65 or greater (Apparatus group IIB).

VQ BLUE High Velocity Valves					
Designation	Maximum pipe length	Minimum pipe size	Outlet	Set pressure	Maximum Ice thickness
VQBLUE P2	50 m	DN 65	62 mm	13kPa	25 mm
VQBLUE P3	50 m	DN 80	72 mm	13kPa	25 mm
VQBLUE P4	50 m	DN 100	78 mm	13kPa	25 mm
VQBLUE P5	50 m	DN 125	108 mm	17kPa	20 mm
VQBLUE P6	50 m	DN 150	115 mm	16kPa	20 mm

VQ BLUE Vacuum Valves			
Designation	Vacuum set Pressure	Inlet	Maximum Ice thickness
VQBLUE V2	3.5kPa	62 mm	0 mm
VQBLUE V3	3.5kPa	71.5 mm	0 mm
VQBLUE V4	3.5kPa	108.5 mm	0 mm
VQBLUE V5	3.5kPa	125 mm	0 mm
VQBLUE V6	3.5kPa	150 mm	0 mm

Maximum discharge rate to be established according to the latest revision of MSC/Circ. 731.

Sizing and location to be in accordance with the latest revision of MSC/Circ. 731.

Installation on board of vessels with class notation of “Tanker for oil” or “Tanker for oil Products” is to comply with the Rules Pt.5 Ch.5 Sec.5.

Installation on board of vessels with class notation of “Tanker for Chemicals” is to comply with the Rules Pt.5 Ch.6 Sec.9.

Cargo tanks connected to the combined pressure-vacuum main vent line must carry the same type of cargo.

A copy of the instruction manual shall be kept on board, and is to include:

- Installation instructions
- Operating instructions
- Maintenance requirements including cleaning
- A copy of the laboratory report
- Flow test data, including flow rates under both positive and negative pressures, operating pressures, operating sensitivity, flow resistance and velocity

Type Examination documentation

Tests carried out

Corrosion Test, flow measurement test, Undamped Oscillation & Endurance Burning tests (for High Velocity Valves), flame transmission/ flash back test, External ice test.

Marking of product

Each device shall be permanently marked indicating the following:

- manufacturer’s name or trademark;
- manufacturer’s designation;
- size of connections;
- approved location for installation, including maximum or minimum length of pipe, if any, between the device and the atmosphere and the apparatus group assigned to the tested device;
- serial number;
- direction of flow through the device;
- set pressure; If the set-pressure is changed, the marking shall be updated accordingly.