DNV·GL

Certificate No:
TAP000009B

TYPE APPROVAL CERTIFICATE

This is to certify:

That the High Velocity Pressure Relief Valve

with type designation(s)
PROTEGO DE/S - DN - IIB3

Issued to
Braunschweiger Flammenfilter GmbH
Braunschweig, Germany

is found to comply with
DNV GL rules for classification – Ships
DNV GL class programme CP-0186 – Type Approval of valves

Application :

The High Velocity Pressure Relief Valve of type PROTEGO DE/S - DN - IIB3 is type approved for application in cargo tank venting system on tankers for products of explosion group IIB3 (MESG 0.65 or greater)
The product approved by this certificate is accepted for installation on all vessels classed by DNV GL.

Design: **High Velocity Pressure Relief Valve**
Sizes: **DN80, DN100, DN125, DN150**

This Certificate is valid until **2018-05-06**.

Issued at **Hamburg** on **2016-02-25**

for **DNV GL**

DNV GL local station: **Magdeburg**

Approval Engineer: **Hagen Markus**

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.

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Job Id: **262.1-020856-1**
Certificate No: **TAP000009B**

Product description

The Protego DE/S-DN-IIB3 consists of a cylindrical housing with flange connections, a weight loaded valve disc and non-adjustable lifting handle. Opening settings and opening/ closing characteristic can be adjusted by variable magnetic force.
Opening settings: 0.06 to 0.50 bar
Closing at 0.04 bar min.

MATERIALS

Stainless steel.
Further materials according to parts list P-02/1046-S05 and P-02/1046-S10 relating to the material check list.

Application/Limitation

Flame proof high velocity vent valve in cargo tank venting system on tankers for products of explosion group IIB3 (MESG 0.65 and greater).
Each individual installation is subject to GL approval including a pressure drop calculation taking into account MSC/Circ. 731 and MSC/Circ.450.

Type Approval documentation

-Test reports acc. to IMO: No. 0295-2-08/92, 0569-10/93 and supplement.
According to EN: No.: IBExU02ATEX2050 X-12/02, Test Report IB-02-3-291/2.
- Drawings No. P-02/1046-Z05 (with bellow) and P-02/1046-Z06 (without bellow).
- ISO 9001, ISO 14001 certificate 97959-2011-AQ-GER-TGA
- Work instruction final inspection AA 8.2.4-4.1
- Leakage rates specification 6738E8A0.docx

Tests carried out

IMO MSC/Circ. 677- 30 Dec. 1994 and MSC/Circ.1009- 8 June 2001.
EN 12874:2001 and EN ISO 16 852:2010.

Marking of product

According to drawing no. 7 12 0767

Periodical assessment

For retention of the Type Approval Certificate (TAC) a DNV GL Surveyor shall perform a periodical assessment every second year.
The objective of the periodical assessment is to verify that the condition for the type approval complies with the status at the time the TAC was issued.

The main scope of the periodical assessment at production place should include at least:
- Verification of the production and quality control system with regard to ensuring continued consistent production and final inspection of the type approved products
- Review of the type approval documentation and verification that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.