

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Preheater, Electrically Heated**with type designation(s)
HEATPAC EHM/EHMS

Issued to

Alfa Laval Tumba AB
Tumba, Stockholms Län, Sweden

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.7 Pressure equipment**Application :****Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.****Temperature range: 0°C - 160°C****Design pressure: 15 bar**Issued at **Høvik** on **2018-08-13**This Certificate is valid until **2023-08-12**.DNV GL local station: **Stockholm**for **DNV GL**Approval Engineer: **Iselinn Vindstad**

Marianne Spæren Marveng
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.



Job Id: **262.1-003124-5**
Certificate No: **TAP000016F**

Product description

Electric oil heaters of the following types:

EHM 7/8 kW
EHM 14/16 kW
EHM 22/24 kW
EHM 36/40 kW
EHM 50/56/100 kW
EHM 65/72/130 kW
EHM 7-130 kW
EHMS 15 kW

Design pressure: 15 bar
Test pressure: 22.5 bar
Joint efficiency: 0.85
DNV GL vessel class: I
Medium: Mineral oil
Corrosion allowance: 1 mm

Materials:

Shell: P265GH, EN10028-2
Bottom plate: P265GH, EN10028-2
Flanges: P265GH, EN10028-2

Manufacturing locations:

Alfa Laval Tumba AB
Hans Stahles väg 7
147 80 Tumba
Sweden

Alfa Laval Aalborg A/S
Gasværksvej 21
9000 Aalborg
Denmark

Application/Limitation

The electric parts of the heater are not included in the type approval.

Type Approval documentation

Tests carried out

N/A

Production testing

Each pressure vessel shall be tested upon completion to at least 1.5 times the design pressure in the presence of a DNV GL Surveyor.

NDT shall be performed as per DNVGL-RU-SHIP Pt. 4 Ch. 7 Sec. 7 [4.1].

Certification

Materials for pressure retaining parts are to be delivered with material certificates according to DNVGL-RU-SHIP Pt. 4 Ch. 7 Sec. 1 Table 5, and shall meet the requirements of relevant parts of DNVGL-RU-SHIP Pt. 2 Ch. 2.

Each pressure vessel shall be certified by a DNV GL surveyor and to be delivered with a DNV GL product certificate when it is required by DNV GL Rules or by purchaser.

Marking of product

Each pressure vessel shall be permanently and legibly marked on the pressure part or on a nameplate permanently attached to a principal pressure part to show its identity and origin.

The marking of pressure vessels shall show at least the following particulars:

- manufacturer's name and address
- type designation and serial number
- year of manufacture
- maximum allowable working pressure
- hydrostatic test pressure.

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.