Certificate No:
TAP00002NT

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pressure Vessel

with type designation(s)
LSA

Issued to
Wieland Provides S.r.l.
Latina, LT, Italy

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.7 Pressure equipment
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Max. working temp.:	**-10°C to 80°C**
Design pressure:	**14 bar**
Operating Medium	**HFC refrigerant**

Issued at **Høvik** on **2023-03-13**

This Certificate is valid until **2028-03-12**.

for **DNV**

DNV local unit: **Italy/Malta CMC**

Approval Engineer: **Jane Lozanov**

Zeinab Sharifi
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.

Product description

Class II pressure vessel type LSA designed according to DNV-RU-SHIP pt.4 Ch.7 and ASME VIII div.1.

Materials:

Shell	SA-516 Gr.70
End plate	SA-516 Gr.60/Gr.70
Couplings	SA-105

Manufacturing locations:
- Wieland Provides Srl, Latina, Italy

Application/Limitation

Corrosion allowance 1 mm.
Joint efficiency 0.85.
Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. Surface in contact with the medium shall be protected from corrosion by considering adequate corrosion allowance, and/or by applying suitable coatings. Surface preparation and coating shall be approved by the Society.
Materials for pressure retaining parts shall be delivered with material certificates according to DNV-RU-SHIP Pt.4 Ch.7 Sec.1 [Table 6] and shall meet the requirements given in the relevant chapters and sections for pressure equipment in DNV-RU-SHIP Pt.2 Ch.2.

Type Approval documentation

Production testing and Certification

Production Testing and Certification for the actual intended application shall follow the latest applicable edition of the Rules (as mentioned on the front page of this certificate).

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 the heat exchanger 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
- design temperature range.

Periodical assessment

For retention of the Type Approval, a DNV 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 DNV-CP-0338.