Certificate No:
TAE000049D

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery (Accumulator)

with type designation(s)
NALE

Issued to
SAFT AB
OSKARSHAMN, **Sweden**

is found to comply with
IEC 60623 (2017-01)
IEC 60092-305 (1980)
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Industrial Nickel-Cadmium batteries for mobile and stationary applications and for use in ship and Offshore Units.

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2021-05-11**
This Certificate is valid until **2026-05-10**.
DNV local station: **Stockholm**

Approval Engineer: **Nicolay Horn**

for **DNV**

Marta Alonso Pontes
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

Industrial pocket **plate SC** Ni-Cd batteries, tested in accordance with IEC 60623 (2017-01) with the following type designations are covered by this certificate:

Type Designation	Rated Capacity C_5 Ah	Drawing number
NALE 10	10	31-0548881
NALE 15	15	31-0548981
NALE 22	22	31-0549081
NALE 30	30	31-0549181
NALE 40	40	31-0549281
NALE 47	47	31-0549381
NALE 62	62	31-0549481
NALE 70	70	31-1218381
NALE 75	75	31-0549581
NALE 85	85	31-1218481
NALE 90	90	31-0549681
NALE 100	100	31-1218181
NALE 110	110	31-0549781
NALE 125	125	31-1218281
NALE 145	145	31-0549881
NALE 165	165	31-1225181
NALE 185	185	31-0549981
NALE 200	200	31-1225281
NALE 220	220	31-0550081
NALE 235	235	31-0550181
NALE 255	255	31-1228881
NALE 280	280	31-0550281
NALE 300	300	31-1232781
NALE 330	330	31-0550381
NALE 360	360	31-1232881
NALE 375	375	31-0550481

Application/Limitation

Industrial Nickel-Cadmium batteries for mobile and stationary applications and for use in ships and Offshore Units.

Installation and maintenance to be done in accordance with Installation and Operating Instructions and/or the Technical Manual.

Type Approval documentation

Tests carried out

Type tests in accordance with IEC 60623 (Fith edition 2017 - 01)

item 7.3 - Discharge performance
- 7.3.2 - Discharge performance at 20°C
- 7.3.3 - Discharge performance at + 5°C
- 7.3.4 - Discharge performance at - 18°C
- 7.3.7 - High rate current test

item 7.4 - Charge retention

item 7.5 - Endurance
- 7.5.1 - Endurance in cycles
- 7.5.2 - Permanent charge endurance

item 7.6 - Charge acceptance at constant voltage

item 7.8 - Electrolyte retention
- 7.8.2 - Test procedure
- 7.8.3 - Acceptance criteria

item 7.9 - Storage

Vibration test.

Marking of product

The product to be marked in accordance with in IEC60623: Manufacturers name, IEC60623, type and manufacturing date.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval is 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 Product sample tests (PST) checked (if not available, tests according item 10.2 in IEC 60623 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.

Assessment to be performed after 2 and 3.5 year and at renewal.

END OF CERTIFICATE