Certificate No:
TAE000049C

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery (Accumulator)

with type designation(s)
SNLE

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 **2021-05-19**
This Certificate is valid until **2026-05-18** .
DNV local unit: **Sweden CMC**

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 with the following type designation are covered by this certificate:

Type Designation	Rated Capacity C_5 Ah	Drawing number
SNLE 10	10	31-0548871
SNLE 15	15	31-0548971
SNLE 22	22	31-0549071
SNLE 30	30	31-0549171
SNLE 40	40	31-0549271
SNLE 47	47	31-0549371
SNLE 55	55	31-1033471
SNLE 62	62	31-0549471
SNLE 70	70	31-1033571
SNLE 75	75	31-0549571
SNLE 85	85	31-1033671
SNLE 90	90	31-0549671
SNLE 100	100	31-1033771
SNLE 110	110	31-0549771
SNLE 125	125	31-1033871
SNLE 145	145	31-0549871
SNLE 165	165	31-1033971
SNLE 185	185	31-0549971
SNLE 200	200	31-1034071
SNLE 220	220	31-0550071
SNLE 235	235	31-0550171
SNLE 255	255	31-1034171
SNLE 280	280	31-0550271
SNLE 300	300	31-1034271
SNLE 330	330	31-0550371
SNLE 360	360	31-1034371
SNLE 375	375	31-0550471

Application/Limitation

Industrial Nickel-Cadmium batteries for general use. Also applicable for mobile and stationary applications 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 (Fourth edition 2001 - 09):

item 4.2 - Discharge performance
- sub-clauses
- 4.2.1 - Discharge performance at 20°C
- 4.2.2 - Discharge performance at 5°C
- 4.2.3 - Discharge performance at - 18°C
- 4.2.4 - High rate current test

item 4.3 - Charge retention

item 4.4 - Endurance
- sub-clauses
- 4.4.1 - Endurance in cycles

item 4.5 - Charge acceptance at constant voltage

item 4.8 - Electrolyte retention

item 4.9 – Storage

The type tests performed are also in accordance with IEC 60623 5th edition (2017-01) item 7.2 to 7.9.
In addition, the following optional tests in IEC 60623 5th edition (2017-01) have been performed:

item 7.3.5 Discharge performance at low temperature (T_L = -30°C)
item 7.3.6 Discharge performance at high temperature (T_H = +70°C)

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 Production Sample Tests (PST) checked (if not available tests to be carried out in accordance item 7.2 in IEC 60623)
- 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 at 2 and 3,5 year and at renewal.

END OF CERTIFICATE