

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery (Accumulator)

with type designation(s)
NBLE

Issued to

SAFT AB
OSKARSHAMN, Sweden

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60623 (2001-09)
IEC 60092-305 (1980)

Application :

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

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

This Certificate is valid until **2017-06-30**.

Issued at **Høvik** on **2017-04-03**

DNV GL local station: **Stockholm**

for **DNV GL**

Approval Engineer: **Nicolay Horn**

Andreas Kristoffersen
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

NICA	
Type	Reference Drawing No.
NBLE7.5	31-05454-
NBLE15	31-05455-
NBLE22	31-05456-
NBLE30	31-05457-
NBLE40	31-05458-
NBLE47	31-05459-
NBLE62	31-05460-
NBLE75	31-05461-
NBLE85	31-10309-
NBLE95	31-05462-
NBLE110	31-05463-
NBLE125	31-10310-
NBLE140	31-05464-
NBLE165	31-10311-
NBLE185	31-05465-
NBLE200	31-10312-
NBLE215	31-10313-
NBLE230	31-05466-
NBLE255	31-10314-
NBLE275	31-05467-

NICA	
Type	Reference Drawing No.
NBLE300	31-10315-
NBLE325	31-05468-
NBLE355	31-10316-
NBLE365	31-10317-
NBLE375	31-05469-
NBLE395	31-10318-
NBLE415	31-05470-
NBLE435	31-10319-
NBLE460	31-05471-
NBLE480	31-10320-
NBLE500	31-10321-
NBLE510	31-05472-
NBLE550	31-05473-
NBLE600	31-05474-
NBLE650	31-05475-
NBLE700	31-05476-
NBLE750	31-05477-
NBLE790	31-10322-
NBLE830	31-05478-
NBLE890	31-10323-

NICA	
Type	Reference Drawing No.
NBLE925	31-05479-
NBLE980	31-10324-
NBLE1000	31-10325-
NBLE1020	31-05480-
NBLE1070	31-10326-
NBLE1100	31-05481-
NBLE1150	31-10327-
NBLE1200	31-05482-
NBLE1250	31-10328-
NBLE1300	31-05483-
NBLE1350	31-10329-
NBLE1400	31-05484-
NBLE1450	31-10330-
NBLE1500	31-05485-
NBLE1560	31-10331-
NBLE1600	31-05486-
NBLE1660	31-05487-
NBLE1690	31-10332-

Application/Limitation

Industrial Nickel-Cadmium batteries for mobile and stationary application

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

Type approval documentation

Test carried out

Type tests in accordance with IEC 60623 (Fourth edition 2001 - 09)

item 4.2 - Discharge performance

- 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

- 4.4.1 - Endurance in cycles
- 4.4.2 - Permanent charge endurance

item 4.5 - Charge acceptance at constant voltage

item 4.8 - Electrolyte retention

- 4.8.1 - Test procedure
- 4.8.2 - Acceptance criteria



Job Id:
Certificate No: **TAE00001KW**

item 4.9 - Storage
and Vibration test

Marking of product

The product to be marked in accordance with section 2 in IEC 60623: Manufacturers name, IEC 60623, 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 7,2 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