



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE000010H
Revision No:
3

This is to certify:

That the **Battery (Accumulator)**

with type designation(s)

NAL, NBL, NAM, NBM, NAH and NBH

Issued to

SAFT AB

OSKARSHAMN, Sweden

is found to comply with

DNV 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 ships and Offshore Units.

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

Issued at **Høvik** on **2022-09-20**

This Certificate is valid until **2027-06-30**.

DNV local station: **Sweden CMC**

Approval Engineer: **Nicolay Horn**



for **DNV**

Digitally Signed By: Elter, Frederik Tore

Location: DNV Høvik, Norway

Signing Date: 21.09.2022 , on behalf of

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.



Form code: TA 251

Revision: 2021-03

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Product description

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

NAL 10 to NAL 355)
NBL 7.5 to NBL540
NAM 9 to NAM 335
NBM 11 to NBM1445
NAH 9 to NAH 210
NBH 8.3 to NBH 920

Sizes from 7.5 Ah to 1445 Ah

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 the Installation and Operating Instructions and/or the Technical Manual.

Type approval documentation

Technical info:

Nickel-Cadmium Batteries, Block types, Brochure from NICA. Nickel-Cadmium Batteries, Single cell types, Brochure from NICA.

Test Reports:

SAFT Technical Report no. 522, issued 2003-09-18.

Mechanical test reports Ref. 94F20909 and 97F22153 (vibration tests), SP- Swedish National Testing and Research Institute.

Test carried out

Type tests in accordance with IEC 60623 (Fifth 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

and Vibration test

Marking of product

The product to be marked in accordance with section 5 in IEC 60623: Manufacturer's 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 survey 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 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 at 2 and 3,5 years and at renewal.

END OF CERTIFICATE