DNV·GL

Certificate No:
TAE00002TA

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery (Accumulator)

with type designation(s)
NICAMAX

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

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 GL.

This Certificate is valid until **2023-03-25**.

Issued at **Høvik** on **2018-03-26**
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.

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Job Id: **262.1-019210-6**
Certificate No: **TAE00002TA**

Product description

Industrial pocket plate Ni-Cd batteries, tested in accordance with IEC 62259 (2003-10) / IEC 60623 (2017-01) with the following type designations are covered by this certificate:

Type Designation	Rated Capacity C_5 Ah
NPI L 15	15
NPI L 30	30
NPI L 47	47
NPI L 62	62
NPI L 75	75
NPI L 95	95
NPI L 110	110
NPI L 140	140
NPI L 185	185
NPI L 235	235
NPI L 280	280
NPI L 325	325
NPI L 375	375
NPI L 420	420
NPI L 470	470
NPI L 515	515
NPI L 560	560

Type Designation	Rated Capacity C_5 Ah
NPI L 610	610
NPI L 650	650
NPI L 700	700
NPI L 750	750
NPI L 800	800
NPI L 840	840
NPI L 890	890
NPI L 940	940
NPI L 980	980
NPI L 1030	1030
NPI L 1120	1120
NPI L 1220	1220
NPI L 1300	1300
NPI L 1400	1400
NPI L 1500	1500
NPI L 1600	1600
NPI L 1700	1700

Type Designation	Rated Capacity C_5 Ah
NPI M 8	8
NPI M 16	16
NPI M 24	24
NPI M 32	32
NPI M 40	40
NPI M 48	48
NPI M 65	65
NPI M 75	75
NPI M 100	100
NPI M 125	125
NPI M 150	150
NPI M 170	170
NPI M 195	195
NPI M 220	220
NPI M 245	245
NPI M 270	270
NPI M 295	295
NPI M 320	320
NPI M 345	345

Type Designation	Rated Capacity C_5 Ah
NPI M 370	370
NPI M 395	395
NPI M 420	420
NPI M 445	445
NPI M 490	490
NPI M 540	540
NPI M 590	590
NPI M 640	640
NPI M 690	690
NPI M 740	740
NPI M 785	785
NPI M 835	835
NPI M 885	885
NPI M 935	935
NPI M 985	985
NPI M 1030	1030
NPI M 1130	1130
NPI M 1230	1230
NPI M 1330	1330

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 62259 (2003 - 10)*:

item 7.2.1 - Discharge performance at +20°C
item 7.2.2 - Discharge performance at +5°C
item 7.2.3 - Discharge performance at -18°C
item 7.2.4 - High rate current test
item 7.3 - Charge retention
item 7.4.1 - Endurance in cycles
item 7.4.2 - Permanent charge endurance
item 7.5 - Charge acceptance at constant voltage
item 7.7 - Vent operation
item 7.8 - Electrolyte retention
item 7.9 - Determination of gas recombination efficiency
item 7.10 - Storage

* The type tests performed are also in accordance with IEC 60623 5th edition (2017-01) Item 7.6 (not 7.6.5 & 7.6.6) to 7.9.

Vibration test.

Marking of product

The product to be marked in accordance with in IEC 62259: Manufacturers name, IEC 62259, 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 62259 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 year and at renewal.

END OF CERTIFICATE