

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery (Accumulator)

with type designation(s)
SBL, SBM and SBH

Issued to

SAFT AB
OSKARSHAMN, Sweden

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

Application :

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

This Certificate is valid until **2018-12-31**.

Issued at **Høvik** on **2016-05-22**

DNV GL local station: **Stockholm**

Approval Engineer: **Nicolay Horn**

for **DNV GL**

Marit Laumann
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

Type SBL	Capacity (Ah)	Drwg. No.
SBL 7,5	7.5	31-00447
SBL 16	16	31-00448
SBL 30	30	31-00449
SBL 37	37	31-00450
SBL 45	45	31-01257
SBL 48	48	31-00459
SBL 59	59	31-01592
SBL 70	70	31-00451
SBL 90	90	31-00460
SBL 102	102	31-00452
SBL 131	131	31-00461
SBL 173	173	31-00462
SBL 214	214	31-00463
SBL 256	256	31-00464
SBL 304	304	31-00465

Type SBL	Capacity (Ah)	Drwg. No.
SBL 346	346	31-00466
SBL 387	387	31-00467
SBL 429	429	31-00468
SBL 470	470	31-00469
SBL 510	510	31-00988
SBL 600	600	31-03112
SBL 645	645	31-00989
SBL 770	770	31-00990
SBL 860	860	31-00991
SBL 1020	1020	31-00992
SBL 1070	1070	31-00993
SBL 1280	1280	31-00994
SBL 1450	1450	31-03099
SBL 1540	1540	31-03100

Type SBM	Capacity (Ah)	Drwg. No.
SBM 11	11	31-00470
SBM 15	15	31-00471
SBM 22	22	31-00472
SBM 30	30	31-00473
SBM 43	43	31-00474
SBM 50	50	31-10344
SBM 56	56	31-00477
SBM 65	65	31-00475
SBM 72	72	31-10345
SBM 84	84	31-00478
SBM 93	93	31-10346
SBM 100	100	31-10347
SBM 112	112	31-00479
SBM 118	118	31-10348
SBM 130	130	31-10349
SBM 138	138	31-00480
SBM 150	150	31-10350
SBM 161	161	31-00481
SBM 168	168	31-10351
SBM 184	184	31-00482
SBM 192	192	31-10352
SBM 200	200	31-10353
SBM 208	208	31-00483
SBM 216	216	31-10354
SBM 231	231	31-00484
SBM 241	241	31-10355
SBM 250	250	31-10356

Type SBM	Capacity (Ah)	Drwg. No.
SBM 260	260	31-10357
SBM 277	277	31-00485
SBM 300	300	31-00486
SBM 323	323	31-00487
SBM 346	346	31-00488
SBM 369	369	31-00489
SBM 392	392	31-00490
SBM 415	415	31-00995
SBM 438	438	31-00996
SBM 461	461	31-00955
SBM 482	482	31-10358
SBM 505	505	31-03113
SBM 526	526	31-10359
SBM 555	555	31-00998
SBM 576	576	31-10360
SBM 600	600	31-10361
SBM 625	625	31-00999
SBM 649	649	31-10362
SBM 674	674	31-10363
SBM 690	690	31-01000
SBM 723	723	31-10364
SBM 740	740	31-01001
SBM 768	768	31-10365
SBM 792	792	31-10366
SBM 830	830	31-01002
SBM 866	866	31-10367
SBM 890	890	31-10368

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Type SBM	Capacity (Ah)	Drwg. No.
SBM 920	920	31-01003
SBM 940	940	31-10369
SBM 965	965	31-03114
SBM 1009	1009	31-10370
SBM 1040	1040	31-01004
SBM 1082	1082	31-10371
SBM 1107	1107	31-10372

Type SBM	Capacity (Ah)	Drwg. No.
SBM 1150	1150	31-01005
SBM 1181	1181	31-10373
SBM 1220	1220	31-03101
SBM 1274	1274	31-10374
SBM 1324	1324	31-10375
SBM 1390	1390	31-03102
SBM 1445	1445	31-10376

Type SBH	Capacity (Ah)	Drwg. No.
SBH 8,3	8,3	31-00491
SBH 12	12	31-00492
SBH 16	16	31-00493
SBH 19	19	31-00494
SBH 29	29	31-00495
SBH 39	39	31-00496
SBH 49	49	31-00497
SBH 59	59	31-00498
SBH 69	69	31-02509
SBH 79	79	31-00499
SBH 88	88	31-02510
SBH 98	98	31-00500
SBH 110	110	31-10269
SBH 118	118	31-02511
SBH 137	137	31-02512
SBH 157	157	31-01102
SBH 177	177	31-01103
SBH 196	196	31-01104
SBH 204	204	31-00513
SBH 236	236	31-01105
SBH 256	256	31-00515
SBH 265	265	31-01106
SBH 270	270	31-10270
SBH 281	281	31-00516
SBH 294	294	31-01107
SBH 307	307	31-00517

Type SBH	Capacity (Ah)	Drwg. No.
SBH 323	323	31-10271
SBH 345	345	31-00518
SBH 353	353	31-01108
SBH 363	363	31-10272
SBH 383	383	31-00519
SBH 393	393	31-01109
SBH 400	400	31-10273
SBH 422	422	31-01006
SBH 440	440	31-10274
SBH 460	460	31-01007
SBH 471	471	31-01110
SBH 491	491	31-01111
SBH 510	510	31-01008
SBH 560	560	31-01009
SBH 590	590	31-01112
SBH 600	600	31-10275
SBH 615	615	31-01010
SBH 640	640	31-01011
SBH 655	655	31-10276
SBH 670	670	31-10277
SBH 705	705	31-01012
SBH 765	765	31-01013
SBH 800	800	31-10278
SBH 865	865	31-03103
SBH 920	920	31-03104

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 (Fourth edition 2001 – 09)

item 4.2 - Discharge performance

- sub-clauses
- 4.2.1 - Discharge performance at 20°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
- 4.4.2 - Permanent charge endurance

item 4.5 - Charge acceptance at constant voltage

item 4.8 - Electrolyte retention

- sub-clauses
- 4.8.1 - Test procedure

item 4.9 - Storage

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 Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT 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 least every second year.

END OF CERTIFICATE



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