



Marine & Offshore

Certificate number: 22541/C0 BV

File number: ACE 4/859/1

Product code: 2584H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

FABRYKA SILNIKOW ELEKTRYCZNYCH BESEL S.A.
BRZEG - POLAND

for the type of product

ASYNCHRONOUS MACHINES (Power below 100kW)

Three phase induction motors Type mSh

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
IEC 60034-1 (2010)

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 01 Jul 2025

For Bureau Veritas Marine & Offshore,

At BV KATOWICE, on 01 Jul 2020,

Wojciech Lubojanski



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Three phase Cage Induction Marine Motors - Type mS*h

* : Mounting form on lugs, on flange(K) ; on lugs with flange (L)

Frame material	Cast aluminium
Number of poles	: 2 to 8
Height of frame	: 56, 63, 71, 80
Power supply	: Up to 690 V 50 Hz or 60 Hz
Enclosure en cooling	: IP 55 - IC411
Ambient temperature	: Up to 50°C
Duty type:	: S1
Insulation class	: F
Temperature rise	: B or F

Rated power at S1

Motor type	kW 2 poles 50 Hz	kW 2 poles 60 Hz	kW 4 poles 50 Hz	kW 4 poles 60 Hz	kW 6 poles 50 Hz	kW 6 poles 60 Hz	kW 8 poles 50 Hz	kW 8 poles 60 Hz
mSh 56-.A	0,09	0,11	0,06	0,07	/	/	/	/
mSh 56-.B	0,12	0,14	0,09	0,11	/	/	/	/
mSh 63-.A	0,18	0,21	0,12	0,14	0,09	0,11	/	/
mSh 63-.B	0,25	0,29	0,18	0,21	0,12	0,14	/	/
mSh 71-.A	0,37	0,43	0,25	0,29	0,18	0,21	0,09	0,11
mSh 71-.B	0,55	0,64	0,37	0,43	0,25	0,29	0,12	0,14
mSKhR71 - 2B2	0,37	0,43	/	/	/	/	/	/
mSKhR71 - 2C2	0,55	0,64	/	/	/	/	/	/
mSh 80-.A	0,75	0,87	0,55	0,64	0,37	0,43	0,18	0,21
mSh 80-.B	1,10	1,30	0,75	0,87	0,55	0,64	0,25	0,29
mSKhR80-2B2	0,75	0,87	/	/	/	/	/	/
mSKhR80-2C2	1,10	1,30	/	/	/	/	/	/

2. DOCUMENTS AND DRAWINGS :

2.1 - Drawings

K2-2195 02/10/2009 : General arrangement

K3-9310 02/10/2009 : Terminal box

K3-10795 03/11/2009 : Materials

K3-9377 02/10/2009 : Wound stator breakdown

K3-9376 02/10/2009 : Rotor breakdown

Drawing K2-2195 3-phase motors, dated 09.03.2015

Drawing K3-9310 Terminal box, dated 09.03.2015

Drawing K3-9376 Rotor, dated 09.03.2015

Drawing K3-9377 Stator, dated 12.06.2013

Drawing K3-10795 Materials, dated 09.03.2015

Datasheet KK mSh_2015 Ref. K.K. 45/15

K4-4434/4433: Aluminium profile

K3-6159/6155: Wound stator

K2-1437: Terminal box

K1-1186/1185: General arrangement

2.2 - Electrical data sheet

As per BESEL S.A F.S.E N° K.K. 45/07

3. TEST REPORTS :

Type test reports dated October 2009 on frames mSh 71 .., mSh 80 ..

Cantoni group:

- Test certificate mSh56-2A, dated Jan 2015
- Test certificate mSh56-2B, dated Jan 2015
- Test certificate mSh56-4A, dated Jan 2015
- Test certificate mSh56-4B, dated Jan 2015
- Test certificate mSh63-2A, dated Jan 2015
- Test certificate mSh63-2B, dated Jan 2015
- Test certificate mSh63-4A, dated Jan 2015
- Test certificate mSh63-4B, dated Jan 2015
- Tests certificate mSKhR71-2B, dated Aug.2015.
- Tests certificate mSKhR71-2C, dated Aug.2015.
- Tests certificate mSKhR80-2B, dated Aug.2015.
- Tests certificate mSKhR80-2C, dated Aug.2015.

4. APPLICATION / LIMITATION:**4.1 - Application / Limitation of use**

According to BV Rules for the Classification of Steel Ships and IEC 60092 series.

4.2 - On board installation & Maintenance requirements

According to BV Rules for the Classification of Steel Ships and IEC 60092 series.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **FABRYKA SILNIKOW ELEKTRYCZNYCH BESEL S.A.** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **FABRYKA SILNIKOW ELEKTRYCZNYCH BESEL S.A.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **FABRYKA SILNIKOW ELEKTRYCZNYCH BESEL S.A.** has declared to Bureau Veritas the following production site:

**FABRYKA SILNIKOW ELEKTRYCZNYCH BESEL S.A.
ELEKTRYCZNA 8
49300 BRZEG
POLAND**

6. MARKING OF PRODUCT:

Name plate according to IEC 60034-1

7. OTHERS:

7.1 - It is **FABRYKA SILNIKOW ELEKTRYCZNYCH BESEL S.A.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 22541/B1 issued on 23 Nov 2015 by the Society.

*** END OF CERTIFICATE ***