



Marine & Offshore
Division

Certificate number: 22875/B0 BV

File number: ACE2/161/1

Product code: 2732I

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
ELSTEEL (PRIVATE) LTD.
- SRI LANKA

for the type of product
SWITCHBOARDS (LOW VOLTAGE)
Low Voltage Modular Electrical Switchboards & Motor Control Centres for marine use.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.
IEC 61439-1/2 (2011).

This certificate is issued to attest that BUREAU VERITAS 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: 06 Nov 2020

For BUREAU VERITAS,

At BV MUMBAI (BOMBAY), on 06 Nov 2015,
Shailendra NATH

Shailendra Nath



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. 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 Division 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 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 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Low voltage modular switchboard assembly consisting of enclosure, main and distribution busbars and busbar support components.

1.1 - Specification:

- Rated Voltage:	690V AC
- Rated frequency:	50 / 60 Hz
- Bus-bar material:	Copper
- Rated Impulse Withstand Voltage (Uimp):	up to 8 kV
- Rated current (In):	up to 7100 A
- Rated peak withstand current (Ipk):	up to 220 kA
- Rated short-time withstand current (Icw):	up to 100 kA, 1s
- Enclosure:	Steel sheet
- Degree of protection:	up to IP 55
- Internal Division:	Form 1 or 4b
- Outgoing units:	Fixed or withdrawable.

2. DOCUMENTS AND DRAWINGS :

Esteel Constructors Manual Revision Dated 01.08.2009

3. TEST REPORTS :

<u>Test laboratory</u>	<u>Test report number</u>	<u>Test report date</u>
IPH Berlin	1819.1061.3.431	June 24th, 2004
IPH Berlin	1513.832.0.468	June 25th, 2002
IPH Berlin	1819.1061.3.434	June 24th, 2004
IPH Berlin	1819.2121286.0680 1819.2130089.0040	April 05th, 2013
IPH Berlin	1819.2120714.0861 1819.2120714.0836 1819.2120714.0574	March 19th, 2013
IPH Berlin	1819.2120714.0573	August 26th, 2013
IPH Berlin	1819.2130777.0451	December 13th, 2013
IPH Berlin	1819.2130776.0500	December 05th, 2013
IPH Berlin	1819.2130089.0248 1819.2130089.0218	October 01st, 2013
ASTA Berlin	1819.0386.5.616	June 15th, 2007
ASTA Berlin	1819.0383.5.617	June 15th, 2007
TCA	102378	November 21st, 2007
TCA	102380	December 21st, 2007
Degree of Protection		
TESTSAFE Australia	29539	October 24th, 2007
Vibration Test		
Vipac Melbourne	302649-02	April 19th, 2001
Inclination Test		
Elsteel Katunayake	TRM 10-01	May 26th, 2010

* Performance Tests according to IEC 60439-1

4. APPLICATION / LIMITATION :

4.1 - Switchgears used in the switchboard are to be type approved.

4.2 - Switchboard to be fitted with insulated handrail

4.3 - Application as follows on board of ships and mobile or fixed offshore units:

- Main, emergency and distribution switchboard
- Motor control centers

4.4 - Type approval covers system design principle. Drawings of switchboard assembly are to be submitted for examination in each case.

4.5 - Control modules are excluded.

4.6 - The temperature rise of busbars for mentioned rated current exceeds 45°C. For compliance with BV Rules for the classification of Steel Ships and Offshore Units, a de-rating factor is to be considered.

4.7 - As per requirements of regulations stated on the front page of the certificate.

4.8 - BV Rules for the Classification of Steel Ships Part C, Chapter 2 and NR 428 DTO R01 E for Electrical Systems on board Offshore Units and Installations.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above products are to be supplied by **ELSTEEL (Private) Ltd** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

6. MARKING OF PRODUCT :

6.1 - Maker's name or trade mark,

6.2 - Serial number of the units,

6.3 - Equipment type number or model identification under which it was type-tested,

6.4 - @ or \ conformity marking, as relevant.

7. OTHERS :

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **ELSTEEL (Private) Ltd** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 22875/A0 BV issued on 16.Jun.2010. by the Society

*** END OF CERTIFICATE ***