



Marine & Offshore

Certificate number: 57032/A0 BV

File number: ACE1/750/9

Product code: 25011

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

SEOUL ELECTRIC WIRE CO., LTD.

Chungcheongbuk-do - KOREA (REPUBLIC OF)

for the type of product

CABLES (LOW VOLTAGE)

ELECTRIC CABLES, RCOP series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

IEC 60092-350: 2014, IEC 60093-360: 2014, IEC 60092-376: 2017

IEC 60228 : 2004

IEC 60331-1/2: 2018, IEC 60331-21: 1991

IEC 60332-1-2: 2004, IEC 60332-3-22: 2018

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: 25 May 2025

For Bureau Veritas Marine & Offshore,

At BV PUSAN, on 25 May 2020,

Chang-Uk HONG



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.

The electronic version is available at: <http://www.veristarp.com/veristamb/jsp/viewPublicPdfTypepec.jsp?id=2cmty03huw>
BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Low voltage cables for Marine and Offshore applications.

1.1 - Specifications :

Rated voltage:	150/250V
Temperature class:	90°C
Flame retardant:	IEC 60332-1-2, IEC 60332-3-22 Cat.A
Cold properties: (C) type only	CSA C 22.2 No. 0.3 (Bend : -40°C/ Impact : -35°C)
Fire resistant (FR type)	IEC 60331-1, IEC 60331-2, IEC 60331-21

1.2 - Construction:

Conductor	Tinned stranded annealed copper as per IEC 60228, Class 2
Fire proof layer	Mica / Glass tape (FR type)
Insulation	EPR
Screen	Aluminium-mylar tape with drain wire
Inner sheath	CR (SE)
Armour	Copper wire braid
Outer Sheath	Flame retardant PVC (ST2)

1.3 - Approval range:

Type	Number of Core	Conductor area(mm ²)
RCOP(IS) FR-RCOP(IS) RCOP(IS)(C) FR-RCOP(IS)(C)	1P ~ 37P 1T ~37T	1
RCOP(OS) FR-RCOP(OS) RCOP(OS)(C) FR-RCOP(OS)(C)	2P ~ 37P 2T ~37T 1Q	1

2. DOCUMENTS AND DRAWINGS :

SEOUL ELECTRIC WIRE CO., LTD.:

- Specification No. SEE-I228-3731 Rev. 1, dated 13-03-2019.

3. TEST REPORTS :

SEOUL ELECTRIC WIRE CO., LTD.:

- Test Report for Type Approval, No. SEC-TAR-5C01, dated 16-03-2020.

4. APPLICATION / LIMITATION :

BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships and Offshore Units.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above products are to be supplied by **SEOUL ELECTRIC WIRE CO., 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.

5.4 - For information, **SEOUL ELECTRIC WIRE CO., LTD.** has declared to Bureau Veritas the following production site(s):

SEOUL ELECTRIC WIRE CO., LTD.
27-20, Meongsimi-gil, Samseong-myeon,
Eumseong-gun
Chungcheongbuk-do
KOREA (REPUBLIC OF)

6. MARKING OF PRODUCT :

The cable shall be marked on the surface outer sheath, in a durable legible and visible manner, with the following information through the length of cable:

- 1) - Voltage grade.
- 2) - Cable symbol and temperature class.
- 3) - Number of conductors and conductor size.
- 4) - Applicable standard(s) to flame retardant and fire resistance if any
- 5) - Manufacturer's name or trade mark.
- 6) - Year of manufacture.

7. OTHERS :

It is **SEOUL ELECTRIC WIRE CO., LTD.**'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.

*** END OF CERTIFICATE ***