



Marine & Offshore

Certificate number: 42178/A1 BV

File number: ACE1/841/2

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

BELDEN GRASS VALLEY INDUSTRIA, COMERCIO E SERVICOS LTDA
 DIADEMA - SP - BRAZIL

for the type of product

CABLES (LOW VOLTAGE)

0.6/1kV

CE NV series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
 IEC 60092-350 (2014), IEC 60092-353 (2016), IEC 60092-360 (2014)
 IEC 60228 (2014)
 IEC 60331-11 (2009), IEC 60331-21 (1999)
 IEC 60332-1-2 (2004), IEC 60332-3-22 Cat.A (2009)
 IEC 60754-2 (2011)
 IEC 61034-2 (2013)

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: 16 Mar 2023

For Bureau Veritas Marine & Offshore,

At BV RIO DE JANEIRO, on 12 Oct 2018,

Marcos ROGERIO GLAD



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/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=ydncnvjceb>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The **CE NV series** are low voltage cables for Marine & Offshore applications.

1.1 - Specification:

Rated voltage : 0.6/1kV
 Temperature class : 90°C
 Flame retardant : IEC 60332-1-2 and IEC 60332-3-22 (Cat.A)
 Fire resistant : IEC 60331-11/21 (ES type only)
 Halogen free : IEC 60754-2
 Low smoke : IEC 61034-2
 Cold bend and impact : CSA C22.2 N°3-09

1.2 - Construction:

Conductor : Tinned copper - Class 2 or Class 5
 Fire protection : Mica tape (ES type only)
 Insulation : XLPE or HEPR
 Inner sheath : Halogen-free thermoplastic compound - SHF1/SHF2 or none
 Armor : Galvanized steel wires braid or tinned copper or none
 Outer sheath : SHF1 or SHF2

1.3 - Approval range:

Type	Cross-sect. (mm ²)	Number of cores
CE NV - CE ES NV	1.5 to 240	1C to 4 C

2. DOCUMENTS AND DRAWINGS :

Belden's data sheet attached to application form, dated 06 Dec. 2015

3. TEST REPORTS :

Belden's tests reports N° 1703311-2, dated January 2018
 Belden's tests reports N° 048435-01, Rev. 04, dated 30 Jul 2018.
 Belden's tests reports N° 048435-02, Rev. 08, dated 31 Jul 2018.
 Belden's tests reports N° 048435-03, Rev. 06, dated 28 Aug 2018.
 Belden's tests reports N° 048435-04, Rev. 05, dated 02 Aug 2018.

4. APPLICATION / LIMITATION :

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

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The CABLES (LOW VOLTAGE) are to be supplied by **BELDEN GRASS VALLEY INDUSTRIA, COMERCIO E SERVICOS LTDA** 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, **BELDEN GRASS VALLEY INDUSTRIA, COMERCIO E SERVICOS LTDA** has declared to Bureau Veritas the following production site(s):

BELDEN GRASS VALLEY INDUSTRIA, COMERCIO E SERVICOS LTDA
Av. Maria Leonor, 1222
Parque Reid
DIADEMA - SP
BRAZIL

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:

- Voltage grade
- Cable symbol and temperature class
- Number of conductors and conductor size
- Applicable standard(s) to flame retardant
- Manufacturer's name or trade mark
- Year of manufacture

7. OTHERS :

7.1 - It is **BELDEN GRASS VALLEY INDUSTRIA, COMERCIO E SERVICOS LTDA**'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 N° 42178/A0 BV issued on 16 Mar 2018 by the Society.

***** END OF CERTIFICATE *****