



## *Confirmation of Product Type Approval*

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 29/OCT/2018. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 03/SEP/2019 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

**Product Name:** Cable  
**Model Name(s):** Polyrad XT

**Presented to:**  
GENERAL CABLE INDUSTRIES, INC.  
1600 WEST MAIN STREET  
WILLIMANTIC  
United States

**Intended Service:** Marine Shipboard & Offshore Applications (Ships, Oil Rigs, etc.) and Variable Frequency Drives.

**Description:** General Power, Lighting, Control & Instrumentation Cables: Single conductor 2kV, Sizes 8 AWG through 3/0 (armored/sheathed only), Sizes 4/0 AWG through 1111 MCM (unarmored, armored and armored/sheathed) Multi-conductor, 6kV, 2 conductors sizes 8AWG through 263 MCM, 3 conductors sizes 8 AWG through 777 MCM, 4 conductors sizes 8 AWG through 646 MCM, 5 conductors sizes 8 AWG through 4/0 MCM. Marine Shipboard cables employing Irradiated Cross-Linked Polyolefin insulation and CP or CPE jackets with optional aluminum or bronze braided armor with optional overall sheath.

**Tier:** 2

**Ratings:** Voltage Class: 0.6 KV/2KV, Insulation: Cross-Linked Polyolefin - Type "P", Temp. Class: 100 °C, Flame Tests: IEEE-45 (1998 and 2002), Flame Tests: IEC 332-3 Category "A", Underwriters Laboratories File E85994 (M), Voltage Class: 600 V/2,000 V, Insulation: Irradiated Polyolefin, Temp. Class: 110 °C (Restricted to 100°C Rating for Shipboard use), Flame Tests: IEEE-383.

**Service Restrictions:** Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. i) For electric cables in hazardous areas, the electric cable

construction and the cable glands are to achieve the appropriate seal, such that gas cannot migrate through the cable in accordance to SVR 4-8-3/9.1 & MODU Rules 4-3-4/7.1.1. ii) This Cable is not intended to be used as Propulsion Cable.

**Comments:**

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. i) Electrical Cables for High-Voltage are to be tested after installation in accordance with: A voltage withstand test is to be carried out on each completed cable and its accessories before a new high voltage installation, including additions to an existing installation, is put into service. An insulation resistance test is to be carried out prior to the voltage withstand test being conducted. When a DC voltage withstand test is carried out, the voltage is to be not less than:  $1.6(2.5U_0 + 2 \text{ kV})$  for cables of rated voltage ( $U_0$ ) up to and including 3.6 kV, or  $4.2U_0$  for higher rated voltages, where  $U_0$  is the highest phase to earth voltage to which the cable is required to be rated. The test voltage is to be maintained for a minimum of 15 minutes. After completion of the test, the conductors are to be connected to earth for a sufficient period in order to remove any trapped electric charge. The insulation resistance test is then repeated. Alternatively, an AC voltage withstand test may be carried out upon advice from the high voltage in accordance to SVR 4-8-5/3.13.3.

**Notes / Documentation:**

Supporting Data: ABS Test Report No. B2467609; Intertek (Listing Report) Test Report No: J97007096-001 (Issued: 05/25/97, Revised: 09/12/03); UL Report No. E85994, Dated June 4, 2001; CSA Certificate No. 1745099 (LL9755-101A) Certificate of Compliance, Date Issued: 2006/07/05; ITS Listing Report # J97007096-001 also includes IEC 332-3, Category A Certification (Fire Test) and IEC 92-3 Type Testing; BICC Brand-Rex Company Specification Nos. BR-781 and BR-782; Intertek" (Listing Report) Test Report No: 9707096CRT-001 (Issued: 07/30/08, Revised: 26 Mar 2012, 17 shts); INS-0079-R1209, Rev. 15, dated 01/05/10, Specification BR-782, 6 Shts; Catalog Form No. INS-0131-1011 (40566), Rapid Transit & Lokomotive Wire & Cable, October 2011, 31 shts; INS-0090-R0911 (1012), MOR Polyrad Flexible IEE 1580 Type P, Offshore & Marine Shipboard Cables , 53 Shts;

**Term of Validity:**

This Product Design Assessment (PDA) Certificate 14-HS1232599C-PDA, dated 04/Sep/2014 remains valid until 03/Sep/2019 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

**ABS Rules:**

Rules for Conditions of Classification, Part 1 - 2014 Steel Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4 which Covers the following: Steel Vessels 4-1-1/Table 3, 4-8-3/9.1, 9.3, 9.5, 9.9 & 9.17; Rules for Conditions of Classification, Part 1 - 2014 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3 which Covers the following: Mobile Offshore Drilling Units 4-1-1/Table 3, 4-3-4/7.1.1, 7.1.2 & 7.1.4;

**National Standards:**

IEEE Std.45 - 1998 & 2002, IEEE Std.1580 - 2001 & 2010; UL 1309, 383, 1202.

**International Standards:**

IEC 332-3 Category "A"; CSA C22.2 No. 245, No. 38; No. 230, IEC 6034

**Government Authority:**

**EUMED:**

**Others:**

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	14-HS1232599C-PDA	04/SEP/2014	03/SEP/2019



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the

date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.