



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 07/NOV/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/AUG/2021 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, Electric

Model Name(s): C18/16/14/12 LSX TPO TS, C18/16/14/12 LSX TPO, S/D/T/F LSX TPO TS, S/D/T/F LSX TPO, TP/TT 20/18/16 LSX TPO TS, TP/TT 20/18/16 LSX TPO, TP/TT (IS)20/18/16 LSX TPO TS, TP/TT (IS)20/18/16 LSX TPO, TP/TT (OS)20/18/16 LSX TPO TS, TP/TT (OS)20/18/16 LSX TPO, TP/TT (IS-OS)20/18/16 LSX TPO TS, TP/TT (IS-OS)20/18/16 LSX TPO, VFD T LSX TPO TS/T LSX TPO

Presented to:

UNIKA UNIVERSAL KABLO SAN. VE TIC A.S.
VELIKOY ORGANIZE SANAYI BOLGESI SANAYI MAH. 3.CADDE NO.4 CERKEZKOY
Turkey

Intended Service:

Power (Distribution), Control and Instrumentation Cables for Marine and Offshore Applications. Not intended for use as propulsion cable.

Description:

"C18/16/14/12 LSX TPO TS-" 0.6/1kV Armored Control Cables "C18/16/14/12 LSX TPO-" 0.6/1kV Unarmored Control Cables "C18/16/14/12 LSX TPO TS-" 0.6/1kV Armored Fire Resistant Control Cables "C18/16/14/12 LSX TPO-" 0.6/1kV Unarmored Fire Resistant Control Cables Sizes 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 16, 24, 27, 37, 61 x 18, 16, 14, 12 AWG "S LSX TPO TS-", "D LSX TPO TS-", "T LSX TPO TS-", "F LSX TPO TS-" 0.6/1kV Armored Distribution Cables "S LSX TPO-", "D LSX TPO-", "T LSX TPO-", "F LSX TPO-" 0.6/1kV Unarmored Distribution Cables "S LSX TPO TS-", "D LSX TPO TS-", "T LSX TPO TS-", "F LSX TPO TS-" 0.6/1kV Armored Fire Resistant Distribution Cables "S LSX TPO-", "D LSX TPO-", "T LSX TPO-", "F LSX TPO-" 0.6/1kV Unarmored Fire Resistant Distribution Cables Sizes 1x16, 14, 12, 10, 8, 7, 6, 5, 4, 3, 2, 1, 1/0, 2/0, 3/0, 4/0 AWG; 1x250, 300, 350, 400, 500, 600 kcmil; 2x16, 14, 12, 10, 8, 7, 6, 5, 4, 3, 2, 1, 1/0, 2/0, 3/0, 4/0 AWG; 3x16, 14, 12, 10, 8, 7, 6, 5, 4, 3, 2, 1, 1/0, 2/0, 3/0, 4/0 AWG; 3x250,

300, 350, 400, 500 kcmil; 4x16, 14, 12, 10, 8, 7, 6, 5, 4, 3, 2, 1, 1/0, 2/0, 3/0, 4/0 AWG; 4x250, 300 kcmil "TP/TT 20/18/16 LSX TPO TS-" 300V Armored Instrumentation Cables "TP/TT 20/18/16 LSX TPO-" 300V Unarmored Instrumentation Cables "TP/TT 20/18/16 LSX TPO TS-" 300V Armored Fire Resistant Instrumentation Cables "TP/TT 20/18/16 LSX TPO-" 300V Unarmored Fire Resistant Instrumentation Cables "TP/TT (IS) 20/18/16 LSX TPO TS-" 300V Armored Instrumentation Cables with Individual Screen "TP/TT (IS) 20/18/16 LSX TPO-" 300V Unarmored Instrumentation Cables with Individual Screen "TP/TT (IS) 20/18/16 LSX TPO TS-" 300V Armored Fire Resistant Instrumentation Cables with Individual Screen "TP/TT (OS) 20/18/16 LSX TPO TS-" 300V Armored Instrumentation Cables with Collective Screen "TP/TT (OS) 20/18/16 LSX TPO-" 300V Unarmored Instrumentation Cables with Collective Screen "TP/TT (OS) 20/18/16 LSX TPO TS-" 300V Armored Fire Resistant Instrumentation Cables with Collective Screen "TP/TT (OS) 20/18/16 LSX TPO-" 300V Unarmored Fire Resistant Instrumentation Cables with Collective Screen "TP/TT (IS-OS) 20/18/16 LSX TPO TS-" 300V Armored Instrumentation Cables with both Individual & Collective Screen "TP/TT (IS-OS) 20/18/16 LSX TPO-" 300V Unarmored Instrumentation Cables with both Individual & Collective Screen "TP/TT (IS-OS) 20/18/16 LSX TPO TS-" 300V Armored Fire Resistant Instrumentation Cables with both Individual & Collective Screen "TP/TT (IS-OS) 20/18/16 LSX TPO-" 300V Unarmored Fire Resistant Instrumentation Cables with both Individual & Collective Screen Sizes: 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 16, 24, 27, 37, 61 x 2, 3 x 20, 18, 16 AWG "T LSX TPO TS-" 2kV Armored VFD Cables "T LSX TPO-" 2kV Unarmored VFD Cables Sizes 3x14, 12, 8, 7, 6, 5, 4, 3, 2, 1, 1/0, 2/0, 3/0, 4/0 AWG; 250, 300, 350, 400, 600 kcmil

Ratings: 0.6/1 kV Power (Distribution) and Control Cables, 300 V Instrumentation Cables and 2 kV VFD Power Cables

Service Restrictions: Unit Certification is not required for this product.

Comments: Electric Cables with Copper Conductors, Low-smoke halogen-free cross-linked polyolefin Insulation (LSX), Low smoke zero halogen thermoplastic polyolefin (TPO) sheath/jacket. Fire resistant versions and metric size versions are provided. For details select "Click here to view more details" on the Type Approval Database of the ABS website after selecting the name of the company and the subject model.

Notes / Documentation: 1. Doc. titled "Armored Control Cables", 2 pages 2. Doc. titled "Unarmored Control Cables", 2 pages 3. Doc. titled "Armored FR Control Cables", 2 pages 4. Doc. titled "Unarmored FR Control Cables", 2 pages 5. Doc. titled "Armored Distribution Cables", 2 pages 6. Doc. titled "Unarmored Distribution Cables", 2 pages 7. Doc. titled "Armored FR Distribution Cables", 2 pages 8. Doc. titled "Unarmored FR Distribution Cables", 2 pages 9. Doc. titled "Armored Instrumentation Cables", 2 pages 10. Doc. titled "Unarmored Instrumentation Cables", 3 pages 11. Doc. titled "Armored FR Instrumentation Cables", 2 pages 12. Doc. titled "Unarmored FR Instrumentation Cables", 3 pages 13. Doc. titled "Armored Instrumentation Cables with Individual Screen", 2 pages 14. Doc. titled "Unarmored Instrumentation Cables with Individual Screen", 2 pages 15. Doc. titled "Armored FR Instrumentation Cables with Individual Screen", 2 pages 16. Doc. titled "Unarmored FR Instrumentation Cables with Individual Screen", 2 pages 17. Doc. titled "Armored Instrumentation Cables with Collective Screen", 2 pages 18. Doc. titled "Unarmored Instrumentation Cables with Collective Screen", 2 pages 19. Doc. titled "Armored FR Instrumentation Cables with Collective Screen", 2 pages 20. Doc. titled "Unarmored FR Instrumentation Cables with Collective Screen", 2 pages 21. Doc. titled "Armored Instrumentation Cables with both Individual and Collective Screen", 2 pages 22. Doc. titled "Unarmored Instrumentation Cables with both Individual and Collective Screen", 2 pages 23. Doc. titled "Armored FR Instrumentation Cables with both Individual and Collective Screen", 2 pages 24. Doc. titled "Unarmored FR Instrumentation Cables with both Individual and Collective Screen", 2 pages 25. Doc. titled "Armored VFD Cables", 1 page 26. Doc. titled "Unarmored VFD Cables", 1 page 27. Technical Data Sheets and Test Reports (Nos. n.800/2, 01SF00360, 01SG00113, 079b-ing/LCF/TOX/03, 079a-ing/LCF/TOX/03), 20 pages 28. TSE Electrical Lab Test Report No. 08-29277 dated 25 September 2008, 8 pages 29. TSE Electrical Lab Test Report No. 08-29278 dated 25 September 2008, 8 pages 30. TSE Electrical Lab Test Report No. 08-29279 dated 25 September 2008, 8

pages 31. TSE Electrical Lab Test Report No. 08-29280 dated 25 September 2008, 8 pages 32. ABS Istanbul Statement of Fact Survey Report No. IS1954248-X dated 25 February 2011 33. UNIKA Test Reports dated 17 June 2016 for Halogen Acid Gas Content, 3 pages 34. UNIKA Test Report dated 17 June 2016 for Halogen Content, 1 page 35. UNIKA Test Reports dated 11 July 2016 for Cable Type T LSX TPO, 2 pages

Term of Validity:

This Product Design Assessment (PDA) Certificate 16-PR1546095-PDA, dated 04/Aug/2016 remains valid until 03/Aug/2021 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:

The 2016 Rules for Conditions of Classification (Part 1), 1-1-4/7.7, 1-1-A3 and 1-1-A4, which cover the following: - 2016 Rules for Building and Classing Steel Vessels 4-8-3/9.1, 4-8-3/9.3, 4-8-3/9.5, 4-8-3/9.9, 4-8-3/9.17, 4-8-5/3.7.6 - 2016 Rules for Building and Classing Steel Vessels Under 90 Meters (295 feet) in Length 4-6-4/13.1.1, 4-6-4/13.1.2, 4-6-4/13.1.4, 4-6-5/1.11.4 - 2016 Rules for Building and Classing Offshore Support Vessels 4-8-3/9.1, 4-8-3/9.3, 4-8-3/9.5, 4-8-3/9.9, 4-8-3/9.17, 4-8-5/3.7.6 The 2016 Rules for Conditions of Classification - Offshore Units and Structures (Part 1), 1-1-4/9.7, 1-1-A2 and 1-1-A3, which cover the following: - 2016 Rules for Building and Classing Mobile Offshore Drilling Units 4-3-4/7.1.1, 4-3-4/7.1.2, 4-3-4/7.1.4, 4-3-5/1.11

National Standards:

CSA C22.2 No. 0.3-09-09 Standard (Section 5.12 Abnormal low temperature, cold bend and cold impact tests as per CSA C22.2 No. 2556-07)

International Standards:


IEEE 45:2002, IEEE 1580:2010, IEC 60332-3-22:2009, IEC 60331-21:1999

Government Authority:

EUMED:

Others:

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	16-PR1546095-PDA	05/AUG/2016	03/AUG/2021



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.