# National Accreditation Board for Testing and Calibration Laboratories

## SCOPE OF ACCREDITATION

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|---|---|---|---|
| **Laboratory Name :** | UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA | | |
| **Accreditation Standard** | ISO/IEC 17025:2017 | | |
| **Certificate Number** | TC-6464 | **Page No** | 1 of 22 |
| **Validity** | 24/11/2021 to 23/11/2023 | **Last Amended on** | 22/12/2021 |

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| Permanent Facility | | | | |
| 1 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Elongation at break of Insulation | IS 14255 (Cl No: 10.1ci ,di & 10.2g) Reaffirmed:2020 |
| 2 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Shrinkage test of Insulation | IS 14255 (Cl No: 10.1c iv) Reaffirmed:2020 |
| 3 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Tensile strength of Insulation | IS 14255 (Cl No: 10.1ci ,di & 10.2g) Reaffirmed:2020 |
| 4 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Ageing in air oven of Insulation | IS 14255 (Cl No: 10.1cii) Reaffirmed:2020 |
| 5 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Carbon Black content | IS 14255 (Cl No: 10.1cvi 1 & diii 1) Reaffirmed:2020 |
| 6 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Conductor Resistance Test | IS 14255 (Cl No: 10.1aiii ,b iii & 10.2 e) Reaffirmed:2005 |
| 7 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | High Voltage Test | IS 14255 (Cl No: 10.1g & 11.2) Reaffirmed:2005 |
| 8 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Hot set test | IS 14255 (Cl No: 10.1ciii) Reaffirmed:2005 |
| 9 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Insulation Resistance (Volume Resistivity) | IS 14255 (Cl No: 10.1f) Reaffirmed:2005 |
| 10 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Thickness of Insulation | IS 14255 (Cl No:10.1e ,10.2f & 7.2) Reaffirmed:2005 |
| 11 | ELECTRICAL- CABLES & WIRES | Aerial Bunched cables for working voltages up to and including 1100 Volts . | Water absorption Test on insulation (Gravimetric) | IS 14255 (Cl No:10.1cv) Reaffirmed:2020 |
| 12 | ELECTRICAL- CABLES & WIRES | Cable under defined condition | Smoke Density | IEC 61034-1 & 2 AMD1:2013 & AMD2:2019 |
| 13 | ELECTRICAL- CABLES & WIRES | Conductor of Insulated cables | Resistance of Conductor | IEC 60228 (Cl.No:5.1.2, 5.2.2, 5.3.2 & 6.2) |
| 14 | ELECTRICAL- CABLES & WIRES | Conductor of insulated electric cables and flexible codes | Resistance of Conductor | IS 8130 (Cl No:7.3) |
| 15 | ELECTRICAL- CABLES & WIRES | Conductors for insulated electric cables and flexible cords | Annealing test for copper conductor. | IS 8130 (Cl No: 7.1.2.1) |
| 16 | ELECTRICAL- CABLES & WIRES | Conductors for insulated electric cables and flexible cords | Persulphate test for tinned copper conductor. | IS 8130 (Cl No: 7.1.1) |
| 17 | ELECTRICAL- CABLES & WIRES | Conductors for insulated electric cables and flexible cords | Tensile test for aluminium conductor. | IS 8130 (Cl No: 7.2.1) |
| 18 | ELECTRICAL- CABLES & WIRES | Conductors for insulated electric cables and flexible cords | Wrapping test for aluminium conductor | IS 8130 (Cl No: 7.2.2) |

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| 19 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Heat shock Test | IS 7098 Part-2 (Cl No:19.1 vi f) |
| 20 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Smoke Density Test | IS 7098 Part-2 (Cl No:19.1.3 d & 20.14) |
| 21 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Tensile strength of Insulation and sheath | IS 7098 Part-2 (Cl No:19.1iiia ,via &19.2g) |
| 22 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Thermal Stability | IS 7098 Part-2 (Cl No:19.1 vig) |
| 23 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Ageing in air oven of Insulation and sheath | IS 7098 Part-2 (Cl No:19.1iiib , vib & vii) |
| 24 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Bending Test | IS 7098 Part-2(Cl.No:20.3) |
| 25 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Carbon Black content | IS 7098 Part-2 (Cl No:19.1 vih) |
| 26 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Cold impact test | IS 7098 Part-2 (Cl No:19.4) |
| 27 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Conductor Resistance Test | IS 7098 Part-2 (Cl No: 19.1id & 19.2d) |
| 28 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Dielectric Power Factor Test | IS 7098 Part-2 (Cl.No:20.4) |
| 29 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Elongation at break of Insulation and sheath | IS 7098 Part-2 (Cl No:19.1iiia ,via &19.2g) |
| 30 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Elongation at break of Steel armour | IS 7098 Part-2 (Cl.No:19.1 ii) |
| 31 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Flammability Test/Flame Retardance Test | IS 7098 Part-2 (Cl No:19.1 xv,20.8,20.11 & 20.12) |
| 32 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Halogen acid gas evolution | IS 7098 Part-2 (Cl No:19.1.3 e & 20.13) |

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| 33 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Heating cycle Test | IS 7098 Part-2 (Cl No: 20.5) |
| 34 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | High Voltage Test | IS 7098 Part-2 (Cl No:20.7) |
| 35 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Hot deformation Test | IS 7098 Part-2 (Cl No:19.1 vi d) |
| 36 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Hot set test | IS 7098 Part-2 (Cl No:19.1iiid) |
| 37 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Insulation Resistance (Volume resistivity) | IS 7098 Part-2 (Cl.19.1 xi & 19.2k) |
| 38 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Loss of Mass | IS 7098 Part-2 (Cl No:19.1 vi e) |
| 39 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Mass of zinc coating on steel armour | IS 7098 Part-2(Cl.No:9.1ii) |
| 40 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Partial Discharge Test | IS 7098 Part-2 (Cl.No:20.2) |
| 41 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Resistivity of semi-conducting screens | IS 7098 Part-2 (Cl No: 20.9) |
| 42 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Shrinkage test of Insulation and sheath | IS 7098 Part-2 (Cl No:19.1iiie & vi c) |
| 43 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Strippability test for insulation screen | IS 7098 Part-2 (Cl No: 19.1va & 13.3) |
| 44 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Tensile strength of Steel armour | IS 7098 Part-2(Cl.No:19.1 ii) |
| 45 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Thickness of Insulation and sheath | IS 7098 Part-2 (Cl No:19.1iv, 12.2,12.4,16.3 &18.3) |
| 46 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Uniformity of zinc coating on steel armour | IS 7098 Part-2(Cl.No:9.1ii) |

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| 47 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Water absorption Test on insulation (Gravimetric) | IS 7098 Part-2 (Cl No:19.1 iii f) |
| 48 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Hot set test | IS 7098 Part-3(Cl. No: 19.1 biv) |
| 49 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Shrinkage test of Insulation and sheath | IS 7098 Part-3 (Cl. No: 19.1 b v & g2vi) |
| 50 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Thermal Stability | IS 7098 Part-3(Cl. No: 19.1 g2vii) |
| 51 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Thickness of Insulation and sheath | IS 7098 Part-3(Cl. No: 19.1bi,g1,12.2, 13.2,14.2,14.3,15.2.2,16.2,18. 3 & 20.16) |
| 52 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Ageing in air oven of Insulation and sheath | IS 7098 Part-3 (Cl. No: 19.1 biii , g2ii & 3 ii) |
| 53 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Bending Test | IS 7098 Part-3 (Cl.No:20.11) |
| 54 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Carbon Black content | IS 7098 Part-3(Cl. No: 19.1 3i) |
| 55 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Cold impact test | IS 7098 Part-3(Cl. No: 19.4) |
| 56 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Conductor Resistance Test | IS 7098 Part-3 (Cl. No : 19.1aii ,19.2.1a & 19.3.1a) |
| 57 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Dielectric Power Factor Measurement | IS 7098 Part-3 (Cl.No:20.12 & 20.13) |
| 58 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Elongation at break of Insulation and sheath | IS 7098 Part-3(Cl. No: 19.1 bii , g2i & 3 ii) |
| 59 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Flammability Test | IS 7098 Part-3(Cl. No: 19.1 h & 20.7) |

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**Validity** 24/11/2021 to 23/11/2023 **Last Amended on** 22/12/2021

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| 60 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Heat shock Test | IS 7098 Part-3(Cl. No: 19.1 g 2iv) |
| 61 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | High Voltage Test | IS 7098 Part-3 (Cl No:20.17) |
| 62 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Hot deformation Test | IS 7098 Part-3 (Cl. No: 19.1 g 2v & 3 iii) |
| 63 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Impulse Withstand Test | IS 7098 Part-3 (Cl.No:20.15) |
| 64 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Load cycle Test | IS 7098 Part-3(Cl. No: 20.14) |
| 65 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Longitudinal Water tightness test | IS 7098 Part-3 (Cl.20.8.1) |
| 66 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Loss of Mass | IS 7098 Part-3(Cl. No: 19.1 g 2 iii) |
| 67 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Measurement of Capacitance | IS 7098Part-3(Cl.No:20.12) |
| 68 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Partial Discharge Test | IS 7098 Part-3 (Cl.No 20.10) |
| 69 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Resistivity of semi-conducting screens/layer | IS 7098 Part-3(Cl. No: 20.2) |
| 70 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated thermoplastic sheathed cables for working voltages from 66 kV up to and including 220 kV | Tensile strength of Insulation and sheath | IS 7098 Part-3(Cl. No: 19.1 bii , g2i & 3 ii) |
| 71 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Hot deformation Test | IS 7098 Part-1 (Cl No:15.1e v) Reaffirmed:2020 |
| 72 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Hot set test | IS 7098 Part-1 (Cl No:15.1diii) Reaffirmed:2020 |
| 73 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Loss of Mass | IS 7098 Part-1 (Cl No:15.1e iii) Reaffirmed:2020 |
| 74 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Smoke Density | IS 7098 Part-1(Cl No:15.1.1 e & 16.15) Reaffirmed:2020 |

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| 75 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Thermal Stability | IS 7098 Part-1 (Cl No:15.1e vii) Reaffirmed:2020 |
| 76 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Thickness of Insulation and sheath | IS 7098 Part-1 (Cl No:15.1c,9.2,12.3&14.3) Reaffirmed:2020 |
| 77 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Adhesion Test on steel armour | IS 7098 Part-1 (Cl.No:15.1b) Reaffirmed:2020 |
| 78 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Ageing in air oven of Insulation and sheath | IS 7098 Part-1 (Cl No:15.1dii & eii) Reaffirmed:2020 |
| 79 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Cold bend/cold impact test | IS 7098 Part-1 (Cl No:15.4 a & b) Reaffirmed:2020 |
| 80 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Conductor Resistance Test | IS 7098 Part-1 (Cl No:15.1a iv & 15.2d) Reaffirmed:2003 |
| 81 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Elongation at break of Insulation and sheath | IS 7098 Part-1 (Cl No:15.1di,ei & 15.2g) Reaffirmed:2020 |
| 82 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Elongation at break of Steel armour | IS:7098-Part-1 (Cl.No:15.1 b) Reaffirmed:2020 |
| 83 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Flammability Test | IS 7098 Part-1 (Cl No:15.1 h & 16.3) Reaffirmed:2020 |
| 84 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Heat shock Test | IS 7098 Part-1 (Cl No:15.1e vi) Reaffirmed:2020 |
| 85 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | High Voltage Test | IS 7098 Part-1( Cl.16.2) Reaffirmed:2020 |
| 86 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Insulation Resistance (Volume resistivity) | IS 7098 Part-1 (Cl.15.1 f & 15.2j) Reaffirmed:2020 |
| 87 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Mass of zinc coating on steel armour | IS 7098 Part-1 (Cl.No:15.1b) Reaffirmed:2020 |
| 88 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Shrinkage test of Insulation and sheath | IS 7098 Part-1 (Cl No:15.1div & e iv) Reaffirmed:2020 |
| 89 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Tensile strength of Insulation and sheath | IS 7098 Part-1 (Cl No:15.1di,ei & 15.2g) Reaffirmed:2020 |
| 90 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Tensile strength of Steel armour | IS:7098-Part-1 (Cl No:15.1 b) Reaffirmed:2020 |
| 91 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Torsion Test of steel armour | IS:7098-Part-1 (Cl.No:15.1 b) Reaffirmed:2020 |
| 92 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Uniformity of zinc coating on steel armour | IS 7098 Part-1 (Cl.No:15.1b) Reaffirmed:2020 |

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| 93 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Water absorption Test on insulation (Gravimetric) | IS 7098 Part-1 (Cl No:15.1d v) Reaffirmed:2020 |
| 94 | ELECTRICAL- CABLES & WIRES | Cross-linked Polyethylene insulated PVC sheathed cables for working voltages up to and including 1100 Volts . | Wrapping Test on steel armour | IS 7098 Part-1 (Cl.No:15.1b) Reaffirmed:2020 |
| 95 | ELECTRICAL- CABLES & WIRES | Crosslinked Polyethylene insulated thermoplastic sheathed cables for working voltages from 3.3 kV up to and including 33 kV | Impulse Withstand Test | IS 7098 Part-2 (Cl.No:20.6) |
| 96 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Ageing in Air Bomb | IS 14494 (Cl No: 26.1d iii & e ii) |
| 97 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Ageing in air oven of Insulation | IS 14494 (Cl No: 26.1d ii ) |
| 98 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Bending Test | IS 14494 (Cl No: 27.3) |
| 99 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Conductor Resistance Test | IS 14494 (Cl No: 26.1a ii) |
| 100 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Dielectric Power Factor Test | IS 14494 (Cl No: 27.4) |
| 101 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Elongation at break of Insulation and sheath | IS 14494 (Cl No: 26.1d i,e i & 26.4d ) |
| 102 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Flammability Test | IS 14494 (Cl No: 26.1q & 27.8) |
| 103 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Heating cycle Test | IS 14494 (Cl No: 27.5) |
| 104 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | High Voltage Test | IS 14494 (Cl No: 27.7) |
| 105 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Hot set test | IS 14494 (Cl No: 26.1d iv & e iii ) |
| 106 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Insulation Resistance Test | IS 14494 (Cl No: 26.1f) |
| 107 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Oil Resistance Test | IS 14494 (Cl No: 26.1 e iv) |
| 108 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Partial Discharge Test | IS 14494 (Cl No: 27.2) |
| 109 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Tear Resistance Test | IS 14494 (Cl No: 26.1 e v) |
| 110 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Tensile strength of Insulation and sheath | IS 14494 (Cl No: 26.1d i,e i & 26.4d ) |

# SCOPE OF ACCREDITATION

**Laboratory Name :** UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA

**Accreditation Standard** ISO/IEC 17025:2017

**Certificate Number** TC-6464 **Page No** 8 of 22

**Validity** 24/11/2021 to 23/11/2023 **Last Amended on** 22/12/2021

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 111 | ELECTRICAL- CABLES & WIRES | Elastomer insulated flexible cables for used in mines | Thickness of Insulation and sheath | IS 14494 (Cl No: 26.1 b i ii iv,16.2,22.2 & 24.2 ) |
| 112 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages from 3.3 kV up to and including 33 kV | Partial Discharge Test | IS 9968 Part-2 (Cl No: 23.2) |
| 113 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages from 3.3 kV up to and including 33 kV | Bending Test | IS 9968 Part-2 (Cl No:23.3) |
| 114 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages from 3.3 kV up to and including 33 kV | High Voltage Test | IS 9968 Part-2 ( Cl.23.7) |
| 115 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Ageing in Air Bomb | IS 9968 Part-1 (Cl No: 21.1 c) Reaffirmed:2000 |
| 116 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Ageing in air oven of Insulation and sheath | IS 9968 Part-1 (Cl No: 21.1b) Reaffirmed:2000 |
| 117 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Conductor Resistance Test | IS 9968 Part-1 (Cl No: 21.1 , 21.2d & 21.3a) reaffirmed:2000 |
| 118 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Elongation at break of Insulation and sheath | IS 9968 Part-1 (Cl No: 21.1a & 21.2f) Reaffirmed:2000 |
| 119 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Flammability Test | IS 9968 Part-1 (Cl No: 21.1 & 22.3) Reaffirmed:2000 |
| 120 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | High Voltage Test | IS 9968 Part-1 ( Cl.22.2) Reaffirmed:2020 |
| 121 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Hot set test | IS 9968 Part-1 (Cl No: 21.1e) Reaffirmed:2000 |
| 122 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Insulation Resistance Test | IS 9968 Part-1 (Cl.21.1 & 21.2j) Reaffirmed:2020 |
| 123 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Oil Resistance Test | IS 9968 Part-1 (Cl No: 21.1 f) Reaffirmed:2000 |
| 124 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Tear Resistance Test | IS 9968 Part-1 (Cl No: 21.1g) Reaffirmed:2000 |
| 125 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Tensile strength of Insulation and sheath | IS 9968 Part-1 (Cl No: 21.1a & 21.2 f) Reaffirmed:2000 |
| 126 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 1100 Volts . | Thickness of Insulation and sheath | IS 9968 Part-1 (Cl No: 21.1,21.2e ,12.2 & 19.2) Reaffirmed:2000 |
| 127 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Ageing in Air Bomb | IS 9968 Part-2 (Cl No:22.1c 4 ) |
| 128 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Ageing in air oven of Insulation and sheath | IS 9968 Part-2 (Cl No:22.1c3) |

# SCOPE OF ACCREDITATION

| | | | |
|---|---|---|---|
| **Laboratory Name :** | UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA | | |
| **Accreditation Standard** | ISO/IEC 17025:2017 | | |
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| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 129 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Cold impact test | IS 9968 Part-2 (Cl No:22.4b) |
| 130 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Conductor Resistance Test | IS 9968 Part-2 (Cl No:22.1a4,22.2d & 22.3a) |
| 131 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Dielectric Power Factor Test | IS 9968 Part-2 (Cl No:23.4) |
| 132 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Elongation at break of Insulation and sheath | IS 9968 Part-2 (Cl No:22.1c2 & 22.2f) |
| 133 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Flammability Test | IS 9968 Part-2 (Cl No:22.1n & 23.8) |
| 134 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Heat shock Test | IS 9968 Part-2 (Cl No:22.1c11) |
| 135 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Heating cycle Test | IS 9968 Part-2 (Cl No:23.5) |
| 136 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Hot deformation Test | IS 9968 Part-2 (Cl No:21.1c9) |
| 137 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Hot set test | IS 9968 Part-2 (Cl No:22.1c5) |
| 138 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Impulse Withstand Test | IS 9968 Part-2 (Cl No:23.6) |
| 139 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Insulation Resistance Test | IS 9968 Part-2 (Cl.22.1d & 22.2k) |
| 140 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Loss of Mass | IS 9968 Part-2 (Cl No:22.1c10) |
| 141 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Oil Resistance Test | IS 9968 Part-2 (Cl No:22.1 c 6) |
| 142 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Shrinkage test of Insulation and sheath | IS 9968 Part-2 (Cl No:22.1c 8) |
| 143 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Tear Resistance Test | IS 9968 Part-2 (Cl No:22.1 c7) |
| 144 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Tensile strength of Insulation and sheath | IS 9968 Part-2 (Cl No:22.1c2 & 22.2f) |
| 145 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Thermal Stability | IS 9968 Part-2 (Cl No:22.1c12) |
| 146 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables for working voltages up to and including 3.3 kV up to and including 33 kV. | Thickness of Insulation and sheath | IS 9968 Part-2 (Cl No:22.1c1,22.2e,15.2,19.2 & 21.3) |

# SCOPE OF ACCREDITATION

| | | | |
|---|---|---|---|
| **Laboratory Name :** | UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA | | |
| **Accreditation Standard** | ISO/IEC 17025:2017 | | |
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|---|---|---|---|---|
| 147 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Ageing in Air Bomb | IS 16246(Cl No: 3.2 & 17.1 Table 1 iv c and 9.1 & 9.2 Table 2 viii) |
| 148 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Ageing in air oven of Insulation and sheath | IS 16246(Cl No: 3.2 & 17.1Table 1 iv b & v b) |
| 149 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Conductor Resistance Test | IS 16246 (Cl No:3.2 & 17.1 Table 1 i b) |
| 150 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Elongation at break of Insulation and sheath | IS 16246(Cl No:3.2 & 17.1 Table 1 iv a , v a & 17.2.1d) |
| 151 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Flammability Test | IS 16246(Cl No: 3.2 & 17.1Table 1ix) |
| 152 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | High Voltage Test | IS 16246 (Cl No:18.2) |
| 153 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Hot set test | IS 16246(Cl No:3.2 & 17.1 Table 1 iv d & v c) |
| 154 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Insulation Resistance Test | IS 16246 (Cl No:3.2 & 17.1Table 1 Vii & IS 6380 Part-43) |
| 155 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Oil Resistance Test | IS 16246(Cl No: Table 2x) |
| 156 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Tensile strength of Insulation and sheath | IS 16246(Cl No:3.2 & 17.1 Table 1 iv a , v a & 17.2.1d) |
| 157 | ELECTRICAL- CABLES & WIRES | Elastomer insulated cables with limited circuit integrity when affected by fire | Thickness of Insulation and sheath | IS 16246(Cl No:3.2 & 17.1 Table 1 iii, 11,14,16 & 17.2.1c) |
| 158 | ELECTRICAL- CABLES & WIRES | Elastomer insulation and sheath of electric cables | Ozone Resistance | IS 6380 (Cl No 4.1 Table 2 vii) Reaffirmed:1996 |
| 159 | ELECTRICAL- CABLES & WIRES | Electric and optical fibre cables | Test under Fire condition (Time of burning the test sample and Length of uncharged portion of the cable sample) | IEC-60332-3-21 |
| 160 | ELECTRICAL- CABLES & WIRES | Electric and optical fibre cables | Test under Fire condition (Time of burning the test sample and Length of uncharged portion of the cable sample) | IEC 60332-1 |
| 161 | ELECTRICAL- CABLES & WIRES | Electric and optical fibre cables | Test under Fire condition time of burning the test sample and Length of uncharged portion of the cable sample | IEC-60332-3-10 |
| 162 | ELECTRICAL- CABLES & WIRES | Electric Cable | Smoke Density | ASTM D2843 |

# SCOPE OF ACCREDITATION

| | | | |
|---|---|---|---|
| **Laboratory Name :** | UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA | | |
| **Accreditation Standard** | ISO/IEC 17025:2017 | | |
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| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 163 | ELECTRICAL- CABLES & WIRES | Electric Cable | Smoke Density | IS 13360 (Part-6/sec-9) |
| 164 | ELECTRICAL- CABLES & WIRES | Electric Cable | Determination of acidity (By pH measurement) and conductivity | IEC 60754-2:2011/amd1 |
| 165 | ELECTRICAL- CABLES & WIRES | Electric cable | Flammability Test | IS 10810 (Part-53) Reaffirmed:2016 |
| 166 | ELECTRICAL- CABLES & WIRES | Electric Cable | Halogen acid gas content | IEC 60754-1:2011/AMD1 |
| 167 | ELECTRICAL- CABLES & WIRES | Electric Cable | Halogen acid gas evolution | IS 10810 (Part-59) Reaffirmed:2020 |
| 168 | ELECTRICAL- CABLES & WIRES | Electric Cable | Oxygen Index | ASTM D 2863 |
| 169 | ELECTRICAL- CABLES & WIRES | Electric Cable | Oxygen Index | IS 10810 (Part-58) Reaffirmed:2003 |
| 170 | ELECTRICAL- CABLES & WIRES | Electric Cable | Temperature Index | IS 10810 (Part-64) |
| 171 | ELECTRICAL- CABLES & WIRES | Electric cable | Water absorption Test (Electrical) | IS 10810 (Part-28) Reaffirmed:2001 |
| 172 | ELECTRICAL- CABLES & WIRES | Electric cables | Dimension of armouring material | IS:10810(Part-36) Reaffirmed :2016 |
| 173 | ELECTRICAL- CABLES & WIRES | Electric cables under fire condition | Smoke Density | IS 10810 (Part-63) Reaffirmed:2003 |
| 174 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Ageing in air oven of Insulation and sheath | IEC 60092-353 (Cl No:6 & Sub Cl No.8.4,8.5 & 8.6 of IEC 60092-350:2014) |
| 175 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Behaviour at high temperature | IEC 60092-353 (Cl No:6 & Sub Cl No.8.8 of IEC 60092-350:2014) |
| 176 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Behaviour at low temperature | IEC 60092-353 (Cl No:6 & Sub Cl No.8.9 of IEC 60092-350:2014) |
| 177 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Determination of modulus of elasticity HEPR Insulation | IEC 60092-353 (Cl No:6 & Sub Cl No.8.19 of IEC 60092-350:2014) |
| 178 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Electrical Resistance of conductor | IEC 60092-353 (Cl No:6 & Sub Cl No.5.2.2 of IEC 60092-350:2014) |

# SCOPE OF ACCREDITATION

**Laboratory Name :** UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA

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| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 179 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Elongation at break of Insulation and sheath | IEC 60092-353 (Cl No:6 & Sub Cl No.8.4 & 8.5 of IEC 60092-350:2014) |
| 180 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Flame Retardant Test | IEC 60092-353 (Cl No:6 & Sub Cl No.8.17.1 & 8.17.2 of IEC 60092-350:2014) |
| 181 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Hot oil immersion | IEC 60092-353 (Cl No:6 & Sub Cl No.8.15 of IEC 60092-350:2014) |
| 182 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Hot set test | IEC 60092-353 (Cl No:6 & Sub Cl No.6.8 of IEC 60092-350:2014) |
| 183 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Insulation Resistance Test | IEC 60092-353 (Cl No:6 & Sub Cl No.7.2 of IEC 60092-350:2014) |
| 184 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Loss of Mass | IEC 60092-353 (Cl No:6 & Sub Cl No.8.7 of IEC 60092-350:2014) |
| 185 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Measurement of external diameter | IEC 60092-353 (Cl No:6 & Sub Cl No.6.7 of IEC 60092-350:2014) |
| 186 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Ozone Resistance | IEC 60092-353 (Cl No:6 & Sub Cl No.8.14 of IEC 60092-350:2014) |
| 187 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Resistance to cracking heat shock | IEC 60092-353 (Cl No:6 & Sub Cl No.8.13 of IEC 60092-350:2014) |
| 188 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Tensile strength of Insulation and sheath | IEC 60092-353 (Cl No:6 & Sub Cl No.8.4 & 8.5 of IEC 60092-350:2014) |
| 189 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Thickness of Insulation , sheath and external diameter | IEC 60092-353 (Cl No:6 & Sub Cl No.6.5,8.2,6.6,8.3 & 6.7 of IEC 60092-350:2014) |
| 190 | ELECTRICAL- CABLES & WIRES | Electrical installations in ships-Power cables for rated voltages 1 kV and 3 kV | Voltage Test/Voltage test on sheath | IEC 60092-353 (Cl No:6 & Sub Cl No.5.2.3,5.2.3.4 ,7.7.9 of IEC 60092-350:2014) |
| 191 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Adhesion Test on steel armour | IS 3975 (Cl.No:9.3) |
| 192 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Dimension of armour | IS 3975 (Cl.No:7) |

# SCOPE OF ACCREDITATION

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|---|---|---|---|
| **Laboratory Name :** | UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA | | |
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| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 193 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Elongation at break of steel armour | IS 3975 (Cl.No:8.1) |
| 194 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Mass of zinc coating on steel armour | IS 3975 (Cl.No:9.1) |
| 195 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Resistance Test | IS 3975 (Cl.No:8.4) |
| 196 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Tensile strength of steel armour | IS 3975 (Cl.No:8.1) |
| 197 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Torsion Test of steel armour | IS 3975 (Cl.No:8.2) |
| 198 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Uniformity of zinc coating on steel armour | IS 3975 (Cl.No:9.2) |
| 199 | ELECTRICAL- CABLES & WIRES | Low carbon GI wires, formed wires and tape armouring of cables | Wrapping Test of steel armour | IS 3975 (Cl.No:8.3) |
| 200 | ELECTRICAL- CABLES & WIRES | Method of tests for cables for Flame Retardance test for bunched cables | Flame Retardance test for bunched cables | IS 10810 (Part-62) Reaffirmed:2014 |
| 201 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Heat shock Test | IS 694 (Table 1 iii c 5,d 5) |
| 202 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Loss of Mass | IS 694 (Table 1 iii c 2,d 2) |
| 203 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Smoke Density | IS 694 (Table 1ii p, iii c 14 & d11 ) |
| 204 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Tensile strength of Insulation and sheath | IS 694 (Table 1 ii f, iii c 1, d 1) |
| 205 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Hot Deformation Test | IS 694 (Table 1 iii c 6,d 6) |
| 206 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Ageing in air oven of Insulation and sheath | IS 694 (Table 1 iii c 3,d 3):2010 |
| 207 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Elongation at break of Insulation and sheath | IS 694 (Table 1 ii f, iii c 1, d 1) |
| 208 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Flammability Test | IS 694 (Table 1ii j, iii c 10) |

# SCOPE OF ACCREDITATION

**Laboratory Name :** UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA

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|---|---|---|---|---|
| 209 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Halogen acid gas evolution | IS 694 (Table 1ii n, iii c 13 & d10 ) |
| 210 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Shrinkage test of Insulation and sheath | IS 694 (Table 1 iii c 4,d 4) |
| 211 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Thermal stability | IS 694 (Table 1 iii c 7,d 7) |
| 212 | ELECTRICAL- CABLES & WIRES | Polyvinyl Chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 V | Thickness of Insulation / sheath | IS 694 (Table 1 ii e, iii b) |
| 213 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Tensile strength of Insulation and sheath | IEC-62067 (Cl No: 12.5.2 & 12.5.3) |
| 214 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Thickness of Insulation and sheath | IEC-62067 (Cl No: 10.6,10.7, & 12.5.1) |
| 215 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Ageing in air oven of Insulation and sheath | IEC-62067 (Cl No: 12.5.2 ,12.5.3 & 12.5.4) |
| 216 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Bending Test | IEC-62067(Cl.No:12.4.3) |
| 217 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Carbon Black content | IEC-62067 (Cl No: 12.5.12) |
| 218 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Electrical Resistance of conductor and metal screen/sheath | IEC-62067 (Cl.No:10.5) |
| 219 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Electrical Test on over sheath (DC Voltage) | IEC-62067 (Cl.No:9.4) |
| 220 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Elongation at break of Insulation and sheath | IEC-62067 (Cl No: 12.5.2 & 12.5.3) |
| 221 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Heat shock Test | IEC-62067 (Cl No: 12.5.8) |
| 222 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Heating cycle Voltage Test | IEC-62067 (Cl No: 12.4.6) |
| 223 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Hot set test | IEC-62067 (Cl No: 12.5.10) |
| 224 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Impulse Voltage Test | IEC-62067 (Cl.No:10.12 & 12.4.7) |
| 225 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Loss of Mass | IEC-62067 (Cl No: 12.5.5) |

# SCOPE OF ACCREDITATION

**Laboratory Name :** UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA

**Accreditation Standard** ISO/IEC 17025:2017

**Certificate Number** TC-6464 **Page No** 15 of 22

**Validity** 24/11/2021 to 23/11/2023 **Last Amended on** 22/12/2021

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 226 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Measurement of Capacitance | IEC-62067 (Cl.No:10.10) |
| 227 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Measurement of external diameter | IEC-62067(Cl No:10.8) |
| 228 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Partial Discharge Test | IEC-62067 (Cl.No:9.2 & 12.4.4) |
| 229 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Pressure Test at High Temperature | IEC-62067 (Cl No: 12.5.6) |
| 230 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Resistivity of semi-conducting screens | IEC-62067 (Cl No: 12.4.9) |
| 231 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Tan Delta Measurement | IEC-62067(Cl.No:12.4.5) |
| 232 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Test at low Temperature | IEC-62067 (Cl No: 12.5.7) |
| 233 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Test under fire condition (Test for vertical flame propagation for a single insulated wire or cable) | IEC-62067 (Cl.No:12.5.13) |
| 234 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Voltage Test | IEC-62067(Cl No:9.3) |
| 235 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 150 kV up to 500 kV | Water Penetration Test | IEC-62067 (Cl.No:10.13 & 12.5.14) |
| 236 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Ageing in air oven of Insulation and sheath | IEC-60840 (Cl No: 12.5.3 ,12.5.4 & 12.5.5) |
| 237 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Elongation at break of Insulation and sheath | IEC-60840 (Cl No: 12.5.3 & 12.5.4) |
| 238 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Shrinkage test of Insulation and sheath | IEC-60840 (Cl No: 12.5.17 & 12.5.18) |
| 239 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Bending Test | IEC-60840(Cl.No:12.4.3) |
| 240 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Carbon Black content | IEC-60840 (Cl No: 12.5.13) |
| 241 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Electrical Resistance of conductor and metal screen | IEC-60840 (Cl.No:10.5) |
| 242 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Electrical Test on over sheath (DC Voltage) | IEC-60840 (Cl.No:9.4) |
| 243 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Heat shock Test | IEC-60840 (Cl No: 12.5.9) |

# SCOPE OF ACCREDITATION

| | | | |
|---|---|---|---|
| **Laboratory Name :** | UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA | | |
| **Accreditation Standard** | ISO/IEC 17025:2017 | | |
| **Certificate Number** | TC-6464 | **Page No** | 16 of 22 |
| **Validity** | 24/11/2021 to 23/11/2023 | **Last Amended on** | 22/12/2021 |

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 244 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Heating cycle Voltage Test | IEC-60840 (Cl No: 12.4.6) |
| 245 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Hot set test | IEC-60840 (Cl No: 12.5.11) |
| 246 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Impulse Voltage Test | IEC-60840(Cl. No: 10.12 &12.4.7) |
| 247 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Loss of Mass | IEC-60840 (Cl No: 12.5.6) |
| 248 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Measurement of Capacitance | IEC-60840 (Cl.No:10.10) |
| 249 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Measurement of external diameter | IEC-60840(Cl No:10.8) |
| 250 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Partial Discharge Test | IEC-60840(Cl.No:9.2 & 12.4.4) |
| 251 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Pressure Test at High Temperature | IEC-60840 (Cl No: 12.5.7) |
| 252 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Resistivity of semi-conducting screens | IEC-60840 (Cl No: 12.4.9) |
| 253 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Tan Delta Measurement | IEC-60840 (Cl.No:12.4.5) |
| 254 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Tensile strength of Insulation and sheath | IEC-60840 (Cl No: 12.5.3 & 12.5.4) |
| 255 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Test at low Temperature | IEC-60840 (Cl No: 12.5.8) |
| 256 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Test under fire condition (Test for vertical flame propagation for a single insulated wire or cable) | IEC-60840 (Cl.No:12.5.14) |
| 257 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Thickness of Insulation and sheath | IEC-60840 (Cl No: 10.6,10.7, & 12.5.2) |
| 258 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Voltage Test | IEC60840(Cl No:9.3) |
| 259 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages above 30 kV up to 150 kV | Water Penetration Test | IEC-60840 (Cl.No:10.13 &12.5.15) |
| 260 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Ageing in air oven of Insulation and sheath | IEC-60502-1 (Cl No: 18.4,18.5 & 18.6) |
| 261 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Heat shock Test | IEC-60502-1 (Cl No:18.10) |

# SCOPE OF ACCREDITATION

| | | | |
|---|---|---|---|
| **Laboratory Name :** | UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA | | |
| **Accreditation Standard** | ISO/IEC 17025:2017 | | |
| **Certificate Number** | TC-6464 | **Page No** | 17 of 22 |
| **Validity** | 24/11/2021 to 23/11/2023 | **Last Amended on** | 22/12/2021 |

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 262 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Loss of Mass | IEC-60502-1 (Cl No:18.7) |
| 263 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Shrinkage test of Insulation and sheath | IEC-60502-1 (Cl No:18.17 & 18.21) |
| 264 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Acid gas emission test | IEC 60502-1 (Cl.No:18.15.4) |
| 265 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Carbon Black content | IEC 60502-1 (Cl No:18.16) |
| 266 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Determination of the elastic modulus of HEPR Insulation | IEC-60502-1(Cl No: 18.20) |
| 267 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Electrical Resistance of conductor | IEC-60502-1 ( Cl.15.2) |
| 268 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Elongation at break of insulation & sheath | IEC-60502-1 (Cl No:18.4 & 18.5) |
| 269 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Flame spread test on single and bunched cables | IEC-60502-1(Cl No:18.15.1&18.15.2) |
| 270 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Hot set test | IEC-60502-1 (Cl No:18.12) |
| 271 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Impulse Test | IEC-60502-1(Cl No: 17.5) |
| 272 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Insulation Resistance | IEC-60502-1 (Cl.17.2 & 17.3) |
| 273 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Measurement of external diameter | IEC-60502-1(Cl No:16.8) |
| 274 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Oil immersion Test for elastomeric sheaths | IEC-60502-1(Cl No: 18.13) |
| 275 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Ozone Resistance test for EPR and HEPR Insulations | IEC-60502-1(Cl No: 18.11) |
| 276 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Pressure Test at High Temperature | IEC-60502-1 (Cl No:18.8) |
| 277 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Tensile strength of Insulation and sheath | IEC-60502-1 (Cl No:18.4 & 18.5) |
| 278 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Test at low Temperature | IEC-60502-1 (Cl No:18.9) |
| 279 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Thickness of Insulation and sheath | IEC-60502-1 (Cl No:16.5,16.6,18.2 & 18.3) |
| 280 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Voltage Test | IEC-60502-1 ( Cl.15.3 & 17.4) |

# SCOPE OF ACCREDITATION

**Laboratory Name :** UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA

**Accreditation Standard** ISO/IEC 17025:2017

**Certificate Number** TC-6464 **Page No** 18 of 22

**Validity** 24/11/2021 to 23/11/2023 **Last Amended on** 22/12/2021

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 281 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 3 kV | Water absorption Test on insulation | IEC-60502-1 (Cl No:18.14) |
| 282 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Ageing in air oven of Insulation and sheath | IEC-60502-2 (Cl No: 19.5,19.6 & 19.7) |
| 283 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Hot set test | IEC-60502-2 (Cl No: 19.13) |
| 284 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Shrinkage test of Insulation and sheath | IEC-60502-2 (Cl No: 19.18 & 19.22) |
| 285 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Thickness of Insulation and sheath | IEC-60502-2 (Cl No: 17.4,17.5,17.6,19.2,19.3&19.4) |
| 286 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Bending Test | IEC-60502-2 (Cl.No:18.2.4) |
| 287 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Carbon Black content | IEC-60502-2 (Cl No: 19.17) |
| 288 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Determination of the elastic modulus of HEPR Insulation | IEC-60502-2(Cl No: 19.21) |
| 289 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Electrical Resistance of conductor | IEC-60502-2 (Cl.No:16.2) |
| 290 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Elongation at break of Insulation and sheath | IEC-60502-2 (Cl No: 19.5&19.6) |
| 291 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Flame spread test on single cables | IEC-60502-2 (Cl.No:19.16) |
| 292 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Heat shock Test | IEC-60502-2 (Cl No: 19.11) |
| 293 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Heating cycle Test | IEC-60502-2 (Cl No: 18.2.7) |
| 294 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Impulse Test | IEC-60502-2 (Cl.No:18.2.8 & 18.3.5) |
| 295 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Insulation Resistance | IEC-60502-2 (Cl No: 18.3.2 & 18.3.3) |
| 296 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Loss of Mass | IEC-60502-2 (Cl No: 19.8) |
| 297 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Measurement of external diameter | IEC-60502-2 (Cl No:17.8) |
| 298 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Oil immersion Test for elastomeric sheaths | IEC-60502-2(Cl No: 19.14) |
| 299 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Ozone Resistance test for EPR and HEPR Insulations | IEC-60502-2(Cl No: 19.12) |

# SCOPE OF ACCREDITATION

| | | | |
|---|---|---|---|
| **Laboratory Name :** | UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA | | |
| **Accreditation Standard** | ISO/IEC 17025:2017 | | |
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| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 300 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Partial Discharge Test | IEC-60502-2(Cl.No:16.3 & 18.2.5) |
| 301 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Pressure Test at High Temperature | IEC-60502-2 (Cl No: 19.9) |
| 302 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Resistivity of semi-conducting screens | IEC-60502-2 (Cl No: 18.2.10) |
| 303 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Strippability test for insulation screen | IEC-60502-2 (Cl No: 19.23) |
| 304 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Tan Delta Measurement | IEC-60502-2 (Cl.No:18.2.6) |
| 305 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Tensile Strength of insulation & sheath | IEC-60502-2 (Cl No: 19.5&19.6) |
| 306 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Test at low Temperature | IEC-60502-2 (Cl No: 19.10) |
| 307 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Thermal Stability | IEC-60502-2 (Cl No: 19.19) |
| 308 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Voltage Test | IEC-60502-2(Cl no:16.4,17.9,18.2.9 & 18.3.4) |
| 309 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Water absorption Test on insulation | IEC-60502-2 (Cl No: 19.15) |
| 310 | ELECTRICAL- CABLES & WIRES | Power cables with extruded insulation and their accessories for rated voltages from 6 kV up to 30 kV | Water Penetration Test | IEC-60502-2 (Cl.No:19.24) |
| 311 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV | Bending Test | IS 1554 Part-2 (Cl No: 19.3) Reaffirmed:2005 |
| 312 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV | Dielectric Power Factor Test | IS 1554 Part-2 (Cl No: 19.4) Reaffirmed:2005 |
| 313 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV | Heating cycle Test | IS 1554 Part-2 (Cl No: 19.5) Reaffirmed:2005 |
| 314 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV | High Voltage Test | IS 1554 Part-2 (Cl No:19.7): Reaffirmed:2005 |
| 315 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV | Impulse Withstand Test | IS 1554 Part-2 (Cl No: 19.6) Reaffirmed:2005 |
| 316 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV | Partial Discharge Test | IS 1554 Part-2 (Cl No: 19.2) Reaffirmed:2005 |
| 317 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV | Torsion Test of steel armour | IS:1554-Part-2 (Cl.No:18.1b) Reaffirmed:2005 |
| 318 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Heat shock Test | IS 1554 Part-2 (Cl No:18.1d6) Reaffirmed:2005 |

# SCOPE OF ACCREDITATION

**Laboratory Name :** UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA

**Accreditation Standard** ISO/IEC 17025:2017

**Certificate Number** TC-6464 **Page No** 20 of 22

**Validity** 24/11/2021 to 23/11/2023 **Last Amended on** 22/12/2021

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 319 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Thermal Stability | IS 1554 Part-2 (Cl No:18.1d7) Reaffirmed:2005 |
| 320 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Adhesion Test on steel armour | IS 1554 Part-2 (Cl.No:18.1b) Reaffirmed :2005 |
| 321 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Ageing in air oven of Insulation and sheath | IS 1554 Part-2 (Cl No:18.1d2) Reaffirmed:2005 |
| 322 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Cold impact test | IS 1554 Part-2 (Cl No:18.4) Reaffirmed:2005 |
| 323 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Conductor Resistance Test | IS 1554 Part-2 (Cl No: 18.3a,18.1a 4 & 18.2d) Reaffirmed:2005 |
| 324 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Elongation at break of Insulation and sheath | IS 1554 Part-2 (Cl No:18.1d1& 18.2f) Reaffirmed:2005 |
| 325 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Elongation at break of Steel armour | IS:1554-Part-2 (Cl.No:18.1b) Reaffirmed:2005 |
| 326 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Flammability Test | IS 1554 Part-2 (Cl No:18.1n & 19.8) Reaffirmed:2005 |
| 327 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Halogen acid gas evolution | IS 1554 Part-2 (Cl No:18.1.3e & 19.13) Reaffirmed:2005 |
| 328 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Hot deformation Test | IS 1554 Part-2 (Cl No:18.1d4) Reaffirmed:2005 |
| 329 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Insulation Resistance Test | IS 1554 Part-2 (Cl.18.1e & 18.2g) Reaffirmed:2005 |
| 330 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Loss of Mass | IS 1554 Part-2 (Cl No:18.1d5) Reaffirmed:2005 |
| 331 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Mass of zinc coating on steel armour | IS 1554 Part-2 (Cl.No:18.1b) Reaffirmed :2005 |
| 332 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Shrinkage test of Insulation and sheath | IS 1554 Part-2 (Cl No:18.1d3) Reaffirmed:2005 |
| 333 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Smoke Density | IS 1554 Part-2(Cl No:18.1.3 f & 19.15) Reaffirmed:2005 |
| 334 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Tensile strength of Insulation and sheath | IS 1554 Part-2 (Cl No:18.1d1& 18.2f) Reaffirmed:2005 |
| 335 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Tensile strength of Steel armour | IS:1554-Part-2 (Cl.18.1b) Reaffirmed:2005 |
| 336 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Thickness of Insulation and sheath | IS 1554 Part-2 (Cl No: 18.1c,11.2,15.4&17.3) Reaffirmed:2005 |

# National Accreditation Board for Testing and Calibration Laboratories

## SCOPE OF ACCREDITATION

**Laboratory Name :** UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA

**Accreditation Standard** ISO/IEC 17025:2017

**Certificate Number** TC-6464 **Page No** 21 of 22

**Validity** 24/11/2021 to 23/11/2023 **Last Amended on** 22/12/2021

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 337 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Uniformity of zinc coating on steel armour | IS 1554 Part-2 (Cl.No:18.1b) Reaffirmed :2005 |
| 338 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Water absorption Test on insulation (Gravimetric) | IS 1554 Part-2 (Cl No:18.1d8) Reaffirmed:2005 |
| 339 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages from 3.3 kV up to and including 11 kV. | Wrapping Test on steel armour | IS 1554 Part-2 (Cl.No:18.1b) Reaffirmed :2005 |
| 340 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Ageing in air oven of Insulation and sheath | IS 1554 Part-1 (Cl No:15.1d2) Reaffirmed:1999 |
| 341 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Elongation at break of Insulation and sheath | IS 1554 Part-1 (Cl No:15.1d1& 15.2f) Reaffirmed:1999 |
| 342 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Shrinkage test of Insulation and sheath | IS 1554 Part-1 (Cl No:15.1d 3) Reaffirmed:1999 |
| 343 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Tensile strength of Insulation and sheath | IS 1554 Part-1 (Cl No:15.1d1& 15.2f) Reaffirmed:1999 |
| 344 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Adhesion Test on steel armour | IS 1554 Part-1 (Cl.No:15.1b) Reaffirmed:1999 |
| 345 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Cold bend/cold impact test | IS 1554 Part-1 (Cl No:15.4 a & b) Reaffirmed:1999 |
| 346 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Conductor Resistance Test | IS 1554 Part-1 (Cl No:15.1a4 & 15.2d) Reaffirmed:1999 |
| 347 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | DC High Voltage Test | IS 1554 Part-1( Cl.16.3.2) Reaffirmed:1999 |
| 348 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Elongation at break of Steel armour | IS:1554-Part-1 (Cl.No:15.1 b) Reaffirmed:1999 |
| 349 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Flammability Test | IS 1554 Part-1 (Cl No:15.1h & 16.4) Reaffirmed:1999 |
| 350 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Halogen acid gas evolution | IS 1554 Part-1 (Cl No:15.1.1f & 16.9) Reaffirmed:1999 |
| 351 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Heat shock Test | IS 1554 Part-1 (Cl No:15.1d6) Reaffirmed:1999 |
| 352 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | High Voltage Test | IS 1554 Part-1( Cl.16.2 & 16.3.1) Reaffirmed:1999 |
| 353 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Hot deformation Test | IS 1554 Part-1 (Cl No:15.1d4) Reaffirmed:1999 |
| 354 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Insulation Resistance Test | IS 1554 Part-1 (Cl.15.1e & 15.2g) Reaffirmed:1999 |
| 355 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Loss of Mass | IS 1554 Part-1 (Cl No:15.1d5) Reaffirmed:1999 |

# SCOPE OF ACCREDITATION

**Laboratory Name :** UNIVERSAL CABLES LIMITED, EHV CABLE LABORATORY, BIRLA VIKAS, SATNA, MADHYA PRADESH, INDIA

**Accreditation Standard** ISO/IEC 17025:2017

**Certificate Number** TC-6464 **Page No** 22 of 22

**Validity** 24/11/2021 to 23/11/2023 **Last Amended on** 22/12/2021

| S.No | Discipline / Group | Materials or Products tested | Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed | Test Method Specification against which tests are performed and / or the techniques / equipment used |
|---|---|---|---|---|
| 356 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Mass of zinc coating on steel armour | IS 1554 Part-1 (Cl.No:15.1b) Reaffirmed:1999 |
| 357 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Tensile strength of Steel armour | IS:1554-Part-1 (Cl.15.1 b) Reaffirmed:1999 |
| 358 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Thermal Stability | IS 1554 Part-1 (Cl No:15.1d7) Reaffirmed:1999 |
| 359 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Thickness of Insulation and sheath | IS 1554 Part-1 (Cl No:15.1c,9.2,12.3&14.4) Reaffirmed:1999 |
| 360 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Torsion Test of steel armour | IS:1554-Part-1 (Cl.No:15.1 b) Reaffirmed:1999 |
| 361 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Uniformity of zinc coating on steel armour | IS 1554 Part-1 (Cl.No:15.1b) Reaffirmed:1999 |
| 362 | ELECTRICAL- CABLES & WIRES | PVC insulated (Heavy Duty) electric cables for working voltages up to and including 1100 V. | Wrapping Test on steel armour | IS 1554 Part-1 (Cl.No:15.1b) Reaffirmed:1999 |
| 363 | ELECTRICAL- CABLES & WIRES | Winding wires for submersible motors | Elongation at break of Insulation and jacket | IS 8783 Part-4/Sec1 (Cl. No: 4.2 2 of IS 8783 Part-3 Reaffirmed:2005:1995) |
| 364 | ELECTRICAL- CABLES & WIRES | Winding wires for submersible motors | Hot deformation Test | IS 8783 Part-4/Sec1 (Cl. No.: 4.2 5 of IS 8783 Part-3 Reaffirmed:2005:1995) |
| 365 | ELECTRICAL- CABLES & WIRES | Winding wires for submersible motors | Shrinkage test | IS 8783 Part-4/Sec1 (Cl. No.: 4.3 4 of IS 8783 Part-3 Reaffirmed:2005:1995) |
| 366 | ELECTRICAL- CABLES & WIRES | Winding wires for submersible motors | Tensile strength of Insulation and jacket | IS 8783 Part-4/Sec1 (Cl. No: 4.2 2 of IS 8783 Part-3 Reaffirmed:2005:1995) |
| 367 | ELECTRICAL- CABLES & WIRES | Winding wires for submersible motors | Water absorption Test (Gravimetric) | IS 8783 Part-4/Sec1 (Cl. No.: 4.3 6 of IS 8783 Part-3 Reaffirmed:2005:1995) |
| 368 | ELECTRICAL- CABLES & WIRES | Winding wires for submersible motors | Heat shock Test | IS 8783 Part-4/Sec1 (Cl. No.: 4.2 4 of IS 8783 Part-3 Reaffirmed:2005:1995) |
| 369 | ELECTRICAL- CABLES & WIRES | Winding wires for submersible motors | Test for Thickness | IS 8783 Part-4/Sec1 (Cl. No: 4.2 1 of IS 8783 Part-3 Reaffirmed:2005:1995) |
| 370 | ELECTRICAL- CABLES & WIRES | Winding wires for submersible motors | Thermal Ageing in air oven of Insulation and sheath | IS 8783 Part-4/Sec1 (Cl. No.: 4.2 3 of IS 8783 Part-3 Reaffirmed:2005:1995) |