

# FEDERATION FOR DEVELOPMENT OF ACCREDITATION SERVICES

118-119, First Floor, Sushant Tower, Sector – 56, Gurugram – 122011, Haryana, India.



## SCOPE OF ACCREDITATION

(Annexure to Certificate of TL – 101)

Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

Validity 17.06.2022 to 16.06.2024

Amended on 22.01.2024

Note: Main scope containing Page No. 1-12

1<sup>st</sup> Extension Scope Containing Page No. 13-45

2<sup>nd</sup> Extension Scope containing Page No. 46-219

### ELECTRICAL TESTING

#### Laboratory based Testing (Oil Immersed Distribution Transformers)

S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
1.	Outdoor/Indoor Type Oil Immersed Distribution Transformers up to and including 2500 kVA, 33 kV	Measurement of Winding Resistance	IS 1180(Part 1):2014 (RA 2019) IS 2026(Part 1):2011 IEC 60076 (Part 1):2011	Digital Micro- ohm Meter
		Measurement of Voltage ratio and check of phase displacement	IS 1180(Part 1):2014 IS 2026(Part 1):2011 IEC 60076 (Part 1):2011	Automatic Turn-Ratio Meter
		Measurement of Short Circuit Impedance (principal tapping, when applicable) and Load Loss at 50% and 100 % load	IS 1180(Part 1):2014 (RA 2019) IS 2026(Part 1):2011 IEC 60076 (Part 1):2011	Digital Power Meter
		Measurement of no-load loss and current	IS 1180(Part 1):2014 (RA 2019) IS 2026(Part 1):2011 IEC 60076 (Part 1):2011	Digital Power Meter
		Measurement of insulation resistance	IS 1180(Part 1):2014 (RA 2019) IS 2026(Part 1):2011 IEC 60076 (Part 1):2011	Digital Insulation Tester
		Induced over-voltage withstand test	IS 1180(Part 1):2014(RA 2019) IS 2026(Part 3):2009 IEC 60076 (Part 3):2013	Motor Generator Set

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Separate source voltage withstand test (Primary & secondary)	IS 1180(Part 1): 2014 (RA 2019) IS 2026(Part 3):2009 IEC 60076 (Part 3):2013	High-Voltage Test Set
		Pressure Test (Routine Test)	IS 1180(Part 1):2014 (RA 2019)	Pressure Gauge
		Oil leakage Test	IS 1180(Part 1):2014 (RA 2019)	Pressure Gauge
		Lightning Impulse Test	IS 1180(Part 1):2014 (RA 2019) IS 2026(Part 3):2009 IEC 60076 (Part 3):2013	Impulse Generator, Analyzer, Impulse Current Shunt
		Temperature rise test	IS 1180(Part 1):2014 (RA 2019) IS 2026(Part 2):2010 IEC 60076 (Part 2):2011	Temp Data logger/16 Channel & Glass Thermometer
		Pressure test (Type Test)	IS 1180(Part 1):2014 (RA 2019)	Pressure Gauge
		Determination of sound level	IS 1180(Part 1):2014 (RA 2019) IS 2026(Part 10):2009 IEC 60076 (Part-10)2016	Sound Level Meter
		No load current at 112.5 % voltage	IS 1180(Part 1):2014 (RA 2019)	Digital Power Meter

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Paint adhesion test	IS 1180 (Part 1):2014 (RA 2019), ASTM D3359	Cutting Tool, Tape, Brush, Eyeglass Lenses.
		Oil BDV and moisture content of transformer oil	IS 1180(Part 1):2014 (RA 2019) IS 335:2018	Motorized Oil Test Set and Karl Fischer titrator
		Measurement of dimension and physical verification	IS 1180(Part 1):2014 (RA 2019)	Steel Scale, Measuring Tape
		Permissible flux density and over fluxing	IS 1180(Part 1):2014 (RA 2019)	Digital Vernier Caliper
		Measurement of zero- sequence impedance(s) on three phase transformers	IS:2026(Part 1):2011 IEC 60076-1:2011	Digital Power Meter
		Measurement of Harmonic on no-load current	IS:2026 (Part 1):2011 IEC 60076-1:2011	Digital Power Meter
		Measurement of dissipation factor tan delta of the insulation system capacitances	IS: 2026 (Part 1):2011 IEC 60076-1:2011	Capacitance & Ten-Delta Test Set
		Determination of capacitance winding to earth and between windings	IS: 2026 (Part 1):2011 IEC:60076-1:2011	Capacitance & Ten-Delta Test Set

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Unbalance Current Test	CBIP Publication No.: 275 CBIP Publication No.: 317	Digital Power Meter, Clamp Meter
		Magnetic Balance Test	CBIP Publication No.: 275, CBIP Publication No.: 317	Digital Power Meter
<b>Laboratory based Testing (Dry Type Power Transformers)</b>				
<b>2</b>	Dry Type Power Transformer up to 2500 kVA, 33 kV	Measurement of Winding Resistance	IS: 2026(Part1):2011 IEC 60076(Part 1):2011 IS 11171:1985	Digital Micro- ohm Meter
		Measurement of Voltage ratio and check of phase displacement	IS: 2026(Part1):2011 IEC 60076(Part 1):2011 IS 11171:1985	Automatic Turn-Ratio
		Measurement of short circuit impedance (principal tapping, when applicable) and Load Loss at 50 % and 100 % load	IS: 2026(Part1):2011 IEC 60076(Part 1):2011 IS 11171:1985	Digital Power Meter
		Measurement of no- load loss and current	IS: 2026(Part1):2011 IEC 60076(Part 1):2011 IS 11171:1985	Digital Power Meter
		Measurement of insulation resistance	IS: 2026(Part1):2011 IEC 60076(Part 1):2011 IS 11171:1985	Insulation Tester

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Induced over-voltage withstand test	IS: 2026: (Part 3): 2009, IEC 60076 (Part 3): 2013, IS: 11171: 1985	Motor Generator Set
		Separate source voltage withstand test (Primary & secondary)	IS: 2026: (Part 3): 2009, IEC 60076 (Part 3): 2013, IS: 11171: 1985	High-Voltage Test Set
		Lightning Impulse test	IS: 2026: (Part 3): 2009, IEC 60076 (Part 3): 2013, IS: 11171: 1985	Impulse Measuring & Analyzing System, Imp Impulse Current Shunt
		Temperature rise test	IS: 2026(Part 2):2010 IEC 60076 (Part 2):2011 IS: 11171:1985	Temp Data logger/16 Channel & Glass Thermometer
		Partial discharge measurement	IS: 11171:1985 IS: 6209: 1985 Annex A of IS: 2026 (Part 3):2009	PD Test Analyzer, PD Calibrator
		Determination of sound sound level	IS: 2026(Part 10):2009 IEC:60076(Part-10):2016 IS: 11171:1985	Sound Level Meter
		Measurement of zero- sequence impedance(s) on three phase transformer	IS: 2026(Part 1):2011 IEC:60076-1:2011	Digital Power Meter

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Measurement of Harmonic on no-load current	IS 2026 (Part 1): 2011, IEC: 60076-1: 2011	Digital Power Meter
		Measurement of dissipation factor tan delta of the insulation system capacitances	IS 2026 (Part 1): 2011, IEC: 60076-1: 2011	Capacitance & Ten-Delta Test Set
		Determination of capacitance winding to earth and between windings	IS 2026 (Part 1): 2011, IEC: 60076-1: 2011	Capacitance & Ten-Delta Test Set
		Unbalance Current Test	CBIP Publication No: 275 CBIP Publication No.: 317	Digital Power Meter, Clamp Meter
		Magnetic Balance Test	CBIP Publication No.: 275, CBIP Publication No.: 317	Digital Power Meter/ Multimeter
Laboratory based Testing (Transformers Oil)				
3	New Insulating Oils as per IS:335: 2018 New Insulating Oils As per IS:335: 2018	Viscosity	IS:1448(Part 25/sec 1):2018 ISO: 3104:1994	Digital Kinematic Viscosity Bath (RTRC-214), Low Temp Kinematic Viscosity Bath (RTRC-306)

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Pour point	IS:1448(Part 10/sec 2):2013 ISO: 3016:1994	Automatic Cloud point & Pour point Apparatus (RTRC-213), Cloud and Pour Point Apparatus (RTRC-305)
		Water Content	IEC:60814: 1997 IS 13567:2018	Karl Fischer Titrator
		Breakdown Voltage	IS 6792:2017 IEC 60156:1995	Automatic Oil Test Set
		Density	IS:1448(Part 16):2014 ISO 3675:1998	Liquid Glass bath (Density Bath) Refrigerated
		Dielectric dissipation factor (DDF)	IS: 6262:1971 IS 16086:2013 (RA2018) IEC: 61620:1998	Capacitance & Tan Delta Test set
		Particle Content	IS 13236:2013 IEC:60970: 2007	Particle counter
		Appearance	Clause 6.6 of IS:335:2018	Qualitative Test

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Acidity	IEC:62021-1:2003	Potentiometric Titrator
		Interfacial Tension (IFT)	ASTM D971:2020	Digital Surface Interfacial Tensiometer
		Total Sulphur content	ISO: 14596:2007 or ASTM D4294:2016 ASTM D129:2018	EDXRF
		Corrosive Sulphur	DIN: 51353:1985	Hot Air Oven
		Potentially corrosive Sulphur	IS: 16310:2017 IEC: 62535:2008	Copper Strip Corrosion Test Apparatus
		DBDS	IS:16497(Part 1)2017 IEC:62697-1:2012	Gas Chromatography Mass Spectrometer
		Inhibitors	IS: 13631:2017 IEC: 60666:2010	HPLC (High Performance Liquid Chromatography)
		Metal Passivator additives	IS 13631:2017 IEC: 60666:2010	HPLC (High Performance Liquid Chromatography)
		2-Furfuryl Alcohol(2- Furfural and related compound content)	IS: 15668:2006 IEC: 61198:1993	

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		5-Hydroxymethyl-2-Furfural(2-Furfural and related compound content)	IS: 15668:2006 IEC: 61198:1993	HPLC (High Performance Liquid Chromatography)
		2-Furfural (2-Furfural and related compound content)	IS: 15668:2006 IEC: 61198:1993	HPLC (High Performance Liquid Chromatography)
		2-Furyl Methyl Ketone (2 Acetyl Furan)(2-Furfural and related compound content)	IS: 15668:2006 IEC: 61198:1993	HPLC (High Performance Liquid Chromatography)
		5-Methyl-2-Furfural (2- Furfural and related compound content)	IS: 15668:2006 IEC: 61198:1993	HPLC (High Performance Liquid Chromatography)
		Oxidation Stability	Method C of IS: 12422:2017 IEC: 61125:1992	Oxidation Stability Test Apparatus
		a. Total acidity	As per 1.9.4 of IS:12422:2017 IEC: 61125:1992	Glass Burette A CLASS Capacity-1 ml Q 3 283Q
		b. Sludge	As per 1.9.1 of IS:12422:2017 IEC: 61125:1992	Weighing Balance
		c. DDF at 90°C	As per 1.9.6 of IS:12422:2017 IEC: 61125:1992	Capacitance & Tan Delta Test set

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Gassing Tendency	Method A of IEC: 60628:1985	Gassing Tendency Apparatus
		Flash Point	IS:1448(Part 21) ISO: 2719:2016	Pensky Marten flash Point Tester
		PCA Content	IP: 346:2015	Weighing Balance
		PCB Content	IS: 16082:2013 IEC: 61619:1997	Gas Chromatography Mass Spectrometer
4	Mineral Insulating Oils in electrical supervision and maintenance guidance as per IS: 1866:2017 or IEC:60422:2013	Color & Appearance	ISO: 2049:1996	Color Comparator
		Breakdown Voltage	IEC: 60156:2018	Automatic Oil Test Set
		Water Content	IEC:60814: 1997	Karl Fischer Titrator
		Acidity (Neutralization value)	IEC:62021-1:2003 IEC:62021-2:2007	Potentiometric Titrator
		Dielectric dissipation factor (DDF) and resistivity	IEC: 60247: 2004	Capacitance & Tan Delta Test set Resistivity (Million Mega Ohm Meter)
		Inhibitor content	IEC: 60666:2010	HPLC (High Performance Liquid Chromatography)
		Sediment/Sludge	Annex-C of IS:1866:2017 IEC: 60422:2013	Weighing Balance

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S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Interfacial Tension (IFT)	ASTM D971, EN14210	Digital Surface Interfacial Tensiometer
		Particle (counting and sizing)	IEC: 60970:2007	Particle counter
		Oxidation Stability	IEC: 61125:1992	Oxidation Stability Test Apparatus
		a. Total acidity	IEC: 61125:1992	Glass Burette A CLASS Capacity-1 ml
		b. Sludge	IEC: 61125:1992	Weighing Balance
		c. DDF at 90°C	IEC: 61125:1992	Capacitance & Tan Delta Test set
		Flash point	ISO 2719 :2016	Pensky Marten flash Point Tester
		Compatibility	IEC: 61125:1992	Qualitative Test (Not Applicable)
		Pour point	ISO: 3016:1994	Automatic Cloud point & Pour point Apparatus, Cloud and Pour Point Apparatus
		Density	ISO 3675:1998	Liquid Glass bath (Density Bath) Refrigerated

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S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Viscosity	ISO: 3104:1994	Digital Kinematic Viscosity Bath, Low Temp Kinematic Viscosity Bath
		Polychlorinated Biphenyls (PCBs)	IEC: 61619:1997	Gas Chromatography Mass Spectrometer (RTRC-243)
		Corrosive Sulphur	IEC:62535, ASTMD1275, Method B of DIN:51353	Hot Air Oven
		Dibenzyl disulfide (DBDS) content	IEC:62697-1:2012	Gas Chromatography Mass Spectrometer
		Passivator content	Annex B of IEC: 60666:2010	HPLC (High Performance Liquid Chromatography)
		Dissolved gas analysis	IS: 10593:2006 IEC: 60599:1999	Gas Chromatography

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### CHEMICAL TESTING (Laboratory based Testing)

#### Group: Pollution & Environment

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
5	Waste water (Effluents /Sewage)	Selenium (as Se)	IS 3025 (Part 56) (AAS Method) 2003: RA2019	Atomic Absorption Spectrometer
		Arsenic (as As)	IS 3025 (Part 37)-(AAS Method) RA 2022)	
		Cadmium	IS 3025 (Part 41) -1992 (AAS Method): RA2019	
		Chromium (As Cr)	IS 3025 (Part 52): 2003 (AAS Method) RA:2019	
		Copper(Cu)	IS 3025 (Part 42): 1992 (AAS Method) RA:2019	
		Fluoride (As F)	APHA23rdEdition:2017 Method 4500-F-D (SPANDS Method)	UV Visible Spectrometer
		Iron (As F)	IS 3025 (Part 53) : 2003 (Phenanthroline Method) RA : 2019	
		Lead (As Pb)	IS 3025 (Part 47) : 1994 (AAS Method) RA:2019	Atomic Absorption Spectrometer
		Zinc	IS 3025 (Part 49) : 1994 (AAS Method) RA:2019	
		Manganese (as Mn)	APHA23rdEdition:2017 Air Acetylene Flame Method 3111 C	

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		Mercury (as Hg)	IS 3025 (Part 48) : 1994 (AAS Method) RA:2019	
		Nickel	IS 3025 (Part 54) : 2003 (AAS Method) RA:2019	
		Silver (as Ag)	APHA23rdEdition:2017 Air Acetylene Flame Method 3111 C	
		Dissolved Oxygen (DO)	IS 3025 (Part 38):1989 : RA 2019	-----
		Biological Oxygen Demand (BOD), 3 days at 27°C	IS 3025 (Part 44):1993: RA 2019	-----
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58):2006: RA 2017	-----
		Chloride (as Cl)	IS 3025 (Part 32) (Argentometric Method):1988 : RA 2019	--
		Ammonia (NH <sub>3</sub> )	IS 3025 (Part 34)1988: RA : 2019	UV Visible spectrometer
		Nitrite (AS NO <sub>2</sub> )	APHA 23rd Edition:2017 Method 4500-NO <sub>2</sub> -B Colorimetric Method	
		Nitrite (AS NO <sub>3</sub> )	IS 3025 (Part 34) : 1988 RA : 2019	
		Phosphate (As PO <sub>4</sub> )	IS 3025 (Part 31) : 1988 RA : 2021	
		Oil & Grease	IS 3025 (Part 39) Partition Gravimetric Method:2021	

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		pH Value at 25°C	IS 3025 (Part 11) Electrometric Method:2022	-----
		Specific conductance at 25°C	IS 3025 (Part 14)2013: RA : 2019	-----
		Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	IS 3025 (Part 43)1992: RA: 2019	UV Visible Spectrometer
		Residual Chlorine	IS 3025 (Part 26)2021	-----
		Sulphate	IS 3025 (Part 24)1986: RA : 2019	UV Visible Spectrometer
		Sulphide (As H <sub>2</sub> S)	IS 3025 (Part 29)1986: RA : 2019	
		Total Hardness	IS 3025 (Part 21)2009: RA : 2019	----
		Total Alkalinity as Calcium Carbonate	IS 3025 (Part 23)1986: RA : 2019	
		Total Dissolved Solids	IS 3025 (Part 16)1984: RA : 2017	---
		Total Solids (Total Residue)	IS 3025 (Part 15)1984: RA : 2019	
		Total suspended solids (Filterable Residue)	IS 3025 (Part 17):2022	
		Turbidity	IS 3025 (Part 10)1984: RA : 2017	Turbidity Meter

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### Group-Metals and alloys

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
6	Copper	Copper	IS 440:1964 R.A.2018	Copper Purity Test Apparatus
		Phosphorus		-----
		Arsenic		-----
		Antimony		-----
		Bismuth		UV Visible spectrometer
		Iron		
		Lead		-----
		Nickel		-----
		Oxygen		-----
		Selenium		-----
		Tellurium		
		Tin		
7	Copper & Copper Alloys	Aluminium	BSEN 15079:2015	Optical Emission Spectrometer
		Antimony		
		Arsenic		
		Cobalt		
		Iron		
		Lead		
		Manganese		
		Nickel		
		Phosphorus		
		Silicon		
		Sulphur		
		Tin		
		Chromium		

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		Silver		
		Zinc		
8	Aluminium & Aluminium alloys	Cadmium	ASTM: E1251-17a	Optical Emission Spectrometer
		Antimony		
		Arsenic		
		Beryllium		
		Bismuth		
		Boron		
		Calcium		
		Chromium		
		Cobalt		
		Copper		
		Gallium		
		Iron		
		Lead		
		Lithium		
		Magnesium		
		Manganese		
		Nickel		
		Phosphorus		
		Silicon		
		Sodium		
		Strontium		
		Tin		
		Titanium		
		Vanadium		
		Zinc		
		Zirconium		
9	Wrought Aluminium Alloys	Copper	IS 11035:1984 R.A.2019	
		Magnesium		
		Silicon		

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		Iron		
		Manganese		
		Zinc		
		Chromium		
		Titanium		
10	Aluminium Alloy Redraw Rods	Silicon	IS 504-1:2002	-----
		Magnesium	IS 504-6:2002	-----
		Iron	IS 504-2:2002	-----
		Copper	IS 504-3:2002	
		Manganese	IS 504-5:2002	-----
		Chromium	IS 504-8:2002	-----
		Zinc	IS 504-4:2002	-----
		Lead	IS 504-1:2002	-----
		Tin	IS 504-9:2002	-----
11	Plane Carbon & Low Alloy Steel	Aluminium	IS 8811:1998 RA 2018	Optical Emission Spectrometer
		Arsenic		
		Boron		
		Carbon		
		Chromium		
		Cobalt		
		Copper		
		Manganese		
		Molybdenum		
		Nickel		
		Niobium		
		Phosphorus		
		Silicon		
		Sulphur		
		Tin		
		Titanium		

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		Vanadium		
		Zirconium		
		Nitrogen		
		Magnesium		
		Lead		
		Tungsten		
		Calcium		
12	Austenitic & Ferric Stainless Steel	Aluminium	IS 9879:1998 RA 2021	Optical Emission Spectrometer
		Arsenic		
		Boron		
		Carbon		
		Chromium		
		Cobalt		
		Copper		
		Manganese		
		Molybdenum		
		Nickel		
		Niobium		
		Phosphorus		
		Silicon		
		Sulphur		
		Tin		
		Titanium		
		Vanadium		
		Zirconium		
		Nitrogen		
		Magnesium		
		Lead		
		Tungsten		
		Calcium		

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S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
13	Austenitic Stainless Steel	Chromium	ASTM: E-1086-2022	Optical Emission Spectrometer
		Nickel		
		Molybdenum		
		Manganese		
		Silicon		
		Copper		
		Carbon		
		Phosphorous		
		Sulphur		
		Aluminum	ASTM: E-415-2021	
		Arsenic		
		Boron		
		Calcium		
		Carbon		
		Chromium		
		Cobalt		
		Copper		
		Manganese		
		Molybdenum		
		Nickel		
		Niobium		
		Nitrogen		
		Phosphorous		

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S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Silicon	ASTM: E-415-2021	Optical Emission Spectrometer
		Sulphur		
		Tin		
		Titanium		
		Vanadium		
		Zirconium		
14	Cast Iron	Carbon	ASTM E 1999-18	
		Chromium		
		Copper		
		Manganese		
		Molybdenum		
		Nickel		
		Phosphorous		
		Silicon		
		Sulphur		
		Tin		
		Titanium		
		Vanadium		
		Carbon	IS 15338:2003	
		Manganese		
		Phosphorous		
		Sulphur		
		Silicon		
		Copper		
Chromium				

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S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Nickel	IS 15338:2003	
		Aluminium		
		Molybdenum		
		Vanadium		
15	Painted & Coated metals	Salt Spray Corrosion Test	ASTM B 117: 2019 JIS Z 2371: 2015	Salt Spray Corrosion Test Assembly

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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### Group: Textile and Wool

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
16	azo colorants accessible with and without extracting the fibers	2 Amino 4 nitro toluene	ISO 14362-1-2017	Gas Chromatography Mass Spectrometer
		2 Amino naphthalene		
		2 Anisidine		
		2,4 Diamino toluene		
		2,4,5-Trimethylaniline		
		2,4-Di-amino Anisole		
		2,4-Xylidine		
		2,6-Xylidine		
		3,3' Dichloro benzidine		
		3,3 Dimethoxy benzidine		
		3,3 Dimethyl benzidine		
		3,3-Dimethyl 4,4 Diaminodiphenylmethane		
		4 Amino azo-toluene		
		4 Amino bi phenyl		
		4 chloro 2 methyl aniline		
		4 Chloro aniline		
		4,4 Diamino diphenyl Methane		
		4,4 Methylene bis (2 chloroaniline)		

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S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
17	Textile in any form	4,4' - Oxydianiline		UV-Visible Spectrometer
		4,4' Methylene dianiline		
		4,4-Thiodianiline		
		Aniline		
		Benzidine		
		O-Toluidine		
		p-Cresidine		
		P-phenyl diamine		
		Banned Amines - p-Amino azobenzene	ISO 14362-3-2017	
17	Textile in any form	Formaldehyde	ISO 14184-1(2011)	UV-Visible Spectrometer
			ISO 14184-2(2011)	
		pH	ISO 3071(2020)	-----
18	Textile Products	Butyl benzyl phthalate (BBP)	ISO 14389(2022)	Gas Chromatography Mass Spectrometer
		Di-butyl phthalate (DBP)		
		Diisobutyl- phthalate (DIBP)		
		Phthalate - Di-n-octylphthalate		
		Phthalate -Bis(2-Ethylhexyl) phthalates (DEHP)		
		Phthalate -Di-iso-decyl-phthalate (DIDP)		
		Phthalate -Diisononyl phthalate (DINP)		

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### Group: Toys and Children's Products

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used	
19	Children’s Metal Products (Including Children’s Metal Jewelry)	Lead content	CPSC- CH-E1001-08.3	Atomic Absorption Spectrometer	
20	Nonmetal Children Products		CPSC-CH-E1002-08.3 CPSC-CH-E1002-09.1		
21	Toys and Children’s Products	Antimony (Sb)	IS 9873-3(2020)		Gas Chromatography Mass Spectrometer
		Arsenic (As)			
		Barium (Ba)			
		Bis (2-ethylhexyl) phthalate(DEHP)	IS 9873-6(2021)		
		Bis (2-ethylhexyl) phthalate(DEHP)	IS 9873-9(2017)		
		Butyl benzyl phthalate (BBP)	IS 9873-6(2021)		
		Butyl benzyl phthalate (BBP)	IS 9873-9(2017)		
		Cadmium (Cd)	IS 9873-3(2020)	Atomic Absorption Spectrometer	
		Chromium (Cr)			
		Di-butyl phthalate (DBP)	IS 9873-6(2021)		

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S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Di-butyl phthalate (DBP)	IS 9873-9(2017)	Gas Chromatography Mass Spectrometer
		Di-iso-decyl phthalate (DIDP)	IS 9873-6(2021)	
		Di-iso-decyl phthalate (DIDP)	IS 9873-9(2017)	
		Di-iso-nonyl phthalate (DINP)	IS 9873-6(2021)	
		Di-iso-nonyl phthalate (DINP)	IS 9873-9(2017)	
		Di-n-octyl phthalate (DNOP)	IS 9873-6(2021)	
		Di-n-octyl phthalate (DNOP)	IS 9873-9(2017)	
		Lead (Pb)	IS 9873-3(2020)	Atomic Absorption Spectrometer
		Mercury (Hg)		
		Selenium (Se)		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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### Group: Leather and Leather Products

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
22	Leather	2 Amino 4 nitro toluene	ISO 17234-1-2020	Gas Chromatography Mass Spectrometer
		2 Amino naphthalene		
		2 Anisidine		
		2,4 Dimamino toluene		
		2,4,5-Trimethylaniline		
		2,4-Di-amino Anisole		
		2,4-Xylidine		
		2,6-Xylidine		
		3,3' Dichloro benzidine		
		3,3 Dimethoxy benzidine		
		3,3 Dimethyl benzidine		
		3,3-Dimethyl 4,4 Diaminodiphenylmethane		
		4 Amino azo benzene		
		4 Amino azo benzene	ISO 17234-2-2011	
		4 Amino azo-toluene	ISO 17234-1-2020	
4 Amino bi phenyl				
4 Amino phenylthio ether				
		4 chloro 2 methyl aniline	ISO 17234-1-2020	Gas Chromatography Mass Spectrometer
		4 Chloro aniline		
		4,4 Diamino diphenyl Methane		

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		4,4 Methylene bis (2 chloroaniline)	ISO 17072-2-2022	Atomic Absorption Spectrometer
		4,4' – Oxydianiline		
		4,4' Methylene dianiline		
		4,4-Thiodianiline		
		Aniline		
		Antimony		
		Arsenic		
		Cobalt		
		Cadmium		
		Chromium		
		Copper		
		Lead		
		Mercury		
		Nickel		
		Benzidine	ISO 17234-1-2020	Gas Chromatography Mass Spectrometer
		Chromium VI contents	ISO 17075-1-2017	UV-Visible Spectrometer
		Formaldehyde	ISO 17226-1-2021	Spectrometer
		O-Toluidine	ISO 17234-1-2020	Gas Chromatography Mass Spectrometer
		p-Cresidine		
		P-phenyl diamine		
		pH Test	ISO 4045:2018	----

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### Group: Trace Element analysis in containers for food items

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
23	Materials and articles in contact with foodstuffs. Plastics substances subject to limitation	Aluminium	EN 13130-1-2004	Atomic Absorption Spectrometer
		Antimony		
		Arsenic		
		Barium		
		Chromium		
		Cobalt		
		Copper		
		Iron		
		Lead		
		Lithium		
		Manganese		
		Nickel		
		Zinc		
24	Packaging Materials And Packages For Foodstuffs	Sensorial test	DIN 10955	-----

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### Group: Plastic and Resins

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
25	Plastics	Cadmium content	BS EN 1122-2001	Atomic Absorption Spectrometer
26	Polymer products	Poly aromatic hydrocarbons(PAH)- Anthracene	AFPS GS 2019:01 PAK	Gas Chromatography Mass Spectrometer
		Poly aromatic hydrocarbons(PAH)- Benzo(a)pyrene		
		Poly aromatic hydrocarbons(PAH)- Benzo(b)fluoranthene		
		Poly aromatic hydrocarbons(PAH)- Benzo(e)pyrene		
		Poly aromatic hydrocarbons(PAH)- Benzo(g,h,i)perylene/ 1,12- Benzoperylene		
		Poly aromatic hydrocarbons(PAH)- Benzo(j)fluoranthene	AFPS GS 2019:01 PAK	Gas Chromatography Mass Spectrometer
		Poly aromatic hydrocarbons(PAH)- Benzo(k)fluoranthene		

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		Poly aromatic hydrocarbons(PAH)-Chrysene		
		Poly aromatic hydrocarbons(PAH)-Indeno(1,2,3-c,d)pyrene		
		Poly aromatic hydrocarbons(PAH)-Naphthalene		
		Poly aromatic hydrocarbons(PAH)-Phenanthrene		
		Poly aromatic hydrocarbons(PAH)-Pyrene		
		Poly aromatic hydrocarbons(PAH)-10 Dibenzo(a,h)anthracene / 1,2:5,6-Dibenzanthracene	AFPS GS 2019:01 PAK	Gas Chromatography Mass Spectrometer
		Poly aromatic hydrocarbons(PAH)-12 Fluoranthene		
		Poly aromatic hydrocarbons(PAH)-4 Benzo(a)anthracene / 1,2- benzanthracene		
27	Polymers	Bis (2-ethylhexyl) phthalate (DEHP)	IEC 62321-8-2017	
		Butyl benzyl phthalate (BBP)		

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		Diisobutyl phthalate (DIBP)		
		PBB's and PBDE's - Decabromobiphenyl (B-209)	IEC 62321-6-2015	
		PBB's and PBDE's- 2,2',3,3',4,4',5,5'- Octabromobiphenyl (BB-194)		

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		PBB's and PBDE's- 2,2',3,3',4,4',5,5',6- Nonabromobiphenyl (BB-206)	IEC 62321-6-2015	
		PBB's and PBDE's- 2,2',3,3',4,4',5,5',6- Nonabromodiphenyl ether (BDE-206)		
		PBB's and PBDE's- 2,2',3,4,4',5,6- Heptabromodiphenyl ether (BDE-181)		
		PBB's and PBDE's- 2,2',3,4,4',5,5'- Heptabromobiphenyl (BB-180)		

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		PBB's and PBDE's - 2,2',3,4,4',5,5'- Octabromodiphenyl ether (BDE-203)		
		PBB's and PBDE's - 2,2',4,5'- Tetrabromobiphenyl (B- 049)		
		PBB's and PBDE's - 2,2',4,5',6- Pentabromobiphenyl (B-103)	IEC 62321-6-2015	
		PBB's and PBDE's - 2,2'3,3'4,4'- Hexabromodiphenyl ether (BDE-128)		
		PBB's and PBDE's - 2,2'4,4',5,5'- Hexabromobiphenyl(BB -153)		
		PBB's and PBDE's - 2,4,6-Tribromobiphenyl (BB-30)		
		PBB's and PBDE's - 3,3',4,4'- Tetrabromodiphenyl ether (BDE-77)		
		PBB's and PBDE's - 3,3'4,4',5- Pentabromodiphenyl ether (BDE-126)		

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		PBB's and PBDE's -3-Bromobiphenyl (B-002)		
		PBB's and PBDE's -4,4'-Dibromobiphenyl (BB-15)	IEC 62321-6-2015	
		PBB's and PBDE's -4,4'-Dibromodiphenyl ether (PBDE-15)		
		PBB's and PBDE's -4-Bromodiphenyl ether (PBDE-3)		
		PBB's and PBDE's -Decabromodiphenyl ether (BDE-209S)		
		PBB's and PBDE's -3,3',4-Tribromodiphenyl ether (BDE-035S)		
		Di-butyl phthalate (DBP)	IEC 62321-8(2017)	
28	Polymers, Electronic Metals	Cadmium (Cd)	IEC 62321-3-1(2013)	Atomic Absorption Spectrometer
			IEC 62321-5(2013)	
		Chromium (Cr)	IEC 62321-3-1(2013)	
			IEC 62321-5(2013)	
			IEC 62321-7-1(2017)	
			IEC 62321-7-2(2017)	
		Di-butyl phthalate (DBP)	IEC 62321-8(2017)	
		Lead (Pb)	IEC 62321-3-1(2013)	
			IEC 62321-5(2013)	
		Mercury (Hg)	IEC 62321-3-1(2013)	
			IEC 62321-4:2013 +AMD 1:2017	

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Group: AYUSH Products

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
29	Herbs	Adenosine	TM-AP/01:2021	HPLC (High Performance Liquid Chromatography)
		Cordycepin		

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### (Electrical Testing)

#### Group- Distribution Equipment Testing

S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
30	Outdoor/Indoor Type Oil Immersed Distribution Transformers up to and including 2500 kVA, 33 kV	Measurement of Winding Resistance	Cl.21.2 a of IS 1180 (Part 3):2021	Digital Micro- ohm Meter
		Measurement of Voltage ratio and check of phase displacement	Cl.21.2 b of IS 1180 (Part 3):2021	Automatic Turn- Ratio Meter
		Measurement of Short Circuit Impedance (principal tapping, when applicable) and Load Loss at 50% and 100 % load	Cl.21.2 c of IS 1180 (Part 3):2021	Digital Power Meter
		Measurement of no-load loss and current	Cl.21.2 d of IS 1180 (Part 3):2021	Digital Power Meter
		Measurement of insulation resistance	Cl.21.2 e of IS 1180 (Part 3):2021	Digital Insulation Tester
		Induced over-voltage withstand test	Cl.21.2 f of IS 1180 (Part 3):2021	Digital Volt meter, Digital Frequency meter
		Separate source voltage withstand test	Cl.21.2 g of IS 1180 (Part 3):2021	AC High Voltage Test Set

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Pressure Test (Routine Test)	Cl.21.2 h of IS 1180 (Part 3):2021	--
		Ester Liquid leakage Test	Cl.21.2 j of IS 1180 (Part 3):2021	
		Lightning Impulse Test	Cl.21.3 a of IS 1180 (Part 3):2021	Impulse Generator, Analyzer, Impulse Current Shunt
		Temperature rise test	Cl.21.3 b of IS 1180 (Part 3):2021	Temp Data logger/16 Channel & Glass Thermometer
		Pressure test (Type Test)	Cl.21.3 d of IS 1180 (Part 3):2021	Pressure Gauge
		Determination of sound level	Cl.21.4 a of IS 1180 (Part 3):2021	Sound Level Meter
		No load current at 112.5 % voltage	Cl.21.4 c of IS 1180 (Part 3):2021	Digital Power Meter
		Paint adhesion test	Cl.21.4 d of IS 1180 (Part 3):2021	--
		Break down Voltage of transformer oil	Cl.21.4 e of IS 1180 (Part 3):2021	--

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

S. No.	Material/Products	Component/Parameter/Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Moisture content in transformer oil	Cl.21.4 e of IS 1180 (Part 3):2021	--
		Measurement of dimension and physical verification	Cl. 11,15.1,15.5,16 of IS 1180 (Part 3):2021	--
		Permissible flux density and over fluxing	Cl.6.9.1,6.9.2,7.9.1,7.9.2,8.9.1,8.9.2 of IS 1180 (Part 3):2021	--
		Vacuum test	Cl.21.5 of IS 1180 (Part 3):2021	--
31	Dry type power transformer as per IEC/IS 2026 (Part 11):2021	Measurement of Winding Resistance	Cl. 14.2.1 of IS 2026 (Part-11):2021	--
		Measurement of Voltage ratio and check of phase displacement	Cl. 14.2.2 of IS 2026 (Part-11):2021	Automatic Turn ratio meter
		Measurement of short circuit impedance and load Loss	Cl. 14.2.3 of IS 2026 (Part-11):2021	Digital Power meter
		Measurement of no load loss and current	Cl. 14.2.4 of IS 2026 (Part-11):2021	
		Applied Voltage test (AV)	Cl. 14.2.5 of IS 2026 (Part-11):2021	AC High Voltage Test Set
		Induced over-voltage withstand test	Cl. 14.2.6 of IS 2026 (Part-11):2021	Digital frequency meter

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Partial discharge measurement	Cl. 14.2.7 of IS 2026 of IS: 2026 (Part-11): 2021	Partial discharge test
		Lightning Impulse test	Cl. 14.3.1 of IS 2026 of IS: 2026 (Part-11): 2021	Impulse current shunt, Capacitive Impulse Voltage Divider, Impulse Measuring & Analyzing System
		Temperature rise test	Cl. 14.3.2 of IS 2026 of IS: 2026 (Part-11): 2021	-
		Measurement of sound level	Cl. 14.4.2 of IS 2026 of IS: 2026 (Part-11): 2021	Sound Level Meter

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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### Group-Insulating Oil Testing

S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
32	Natural Ester Fluid and Synthetic Ester Fluid	Viscosity	IS:1448(Part 25/sec 1):2018, ISO: 3104:2020,	Digital Kinematic Viscosity Bath, Low Temp Kinematic Viscosity Bath
		Pour point	IS:1448(Part 10/sec 2):2013, ISO: 3016:2019 ASTM D97-17b-2022	Automatic Cloud point & Pour point Apparatus, Cloud and Pour Point Apparatus
		Water Content	IEC:60814: 1997, IS 13567:2018 ASTM D1533-2020	Karl Fischer Titrator
		Breakdown Voltage	IS 6792:2017, IEC 60156:2018, ASTM D1816-12 (Reapproved 2019)	Automatic Oil Test Set
		Density	IS:1448(Part 16):2014, ISO 3675:1998	Liquid Glass bath (Density Bath) Refrigerated
		Dielectric dissipation factor (DDF)	IS: 6262:1971 IS 16086:2013(RA 2018) IEC: 61620:1998	Capacitance & Tan Delta Test set

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Particle Content	IS 13236:2013, IEC:60970: 2007	Particle counter
		Acidity (Neutralization Value)	IEC:62021-1:2003, IEC:62021-2:2007, ASTM D664-18	-----
		Interfacial Tension (IFT)	ASTM D971:2020, EN14210-2003	Digital Surface Interfacial Tensiometer
		Total Sulphur content	ISO: 14596:2007 ASTM D4294:2021 ASTM D129:2018	EDXRF
		Corrosive Sulphur	DIN: 51353:1985 ASTM D1275-15	--
		Potentially corrosive Sulphur	IS: 16310:2017, IEC: 62535:2008	
		DBDS	IS:16497(Part 1)2017, IEC:62697-1:2012	Gas Chromatography Mass Spectrometer
		Inhibitors	IS: 13631:2017, IEC: 60666:2010	
		Metal Passivator additives		
		2-Furfuryl Alcohol (2- Furfural and related compound content)	IS: 15668:2006 IEC: 61198:1993	HPLC

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		5-Hydroxymethyl-2-Furfural (2-Furfural and related compound content)	IS: 15668:2006 IEC: 61198:1993	HPLC (High Performance Liquid Chromatography)
		2-Furfural (2-Furfural and related compound content)		
		2-Furyl Methyl Ketone (2 Acetyl Furan) (2-Furfural and related compound content)		
		5-Methyl-2-Furfural (2-Furfural and related compound content)		
		a. Total acidity After oxidation stability	IS: 12422:2017, IEC: 61125:2018	Oxidation Stability Test Apparatus,
		b. Sludge After oxidation stability		Oxidation Stability Test Apparatus,
		c. DDF at 90oC After oxidation stability		Capacitance & Tan Delta Test set
		Gassing Tendency	IEC: 60628:1985	Gassing Tendency Apparatus

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Flash Point	IS:1448(Part 21)-2019, ISO: 2719:2016	Pensky Marten flash Point Tester
		PCA Content	IP: 346:2004	Weighing Balance
		PCB Content	IS: 16082:2013 IEC: 61619:1997, ASTM D4059-00 (Reapproved 2018)	Gas Chromatography Mass Spectrometer
		Color	ISO: 2049:1996, ASTM D1500-12 (Reapproved 2017)	Color Comparator
		Dielectric breakdown voltage, impulse conditions	ASTM D3300-20	Automatic Oil Test Set
		AC loss characteristics— dissipation factor and relative permittivity	ASTM D924 -15	Capacitance & Tan Delta Test set
		Kinematic viscosity	ASTM D445-21e2	Digital Kinematic Viscosity Bath, Low Temp
		Flash point and fire point—Cleveland Open Cup Method	ASTM D92-18	Pensky Marten flash Point Tester
		Relative density (specific gravity)	ASTM D1298-12b (Reapproved 2017)	Liquid Glass bath (Density Bath) Refrigerated

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S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
		Volume resistivity (specific resistance)	ASTM D1169-19a	Resistivity (Million Mega Ohm Meter)
		Visual examination field test and color)	ASTM D1500-12 (Reapproved 2017), ASTM D1524-2022	Color Comparator
		Gassing of insulating oils under electrical stress and ionization	ASTM D2300-08 (Reapproved 2017	Gassing Tendency Apparatus
		Acid and Base Number by Color indicator Titration	ASTM D974-2021	-----
		Dissolved Gas Analysis (Hydrogen)	IS: 10593:2018, ASTM D3612-02 (Reapproved 2017) IS 9434 (2019)	Gas Chromatography
		Dissolved Gas Analysis (Oxygen)		
		Dissolved Gas Analysis (Nitrogen)		
		Dissolved Gas Analysis (Carbon Monoxide)		
		Dissolved Gas Analysis (Carbon Dioxide)		
		Dissolved Gas Analysis(Methane)		
		Dissolved Gas Analysis(Ethane)		
		Dissolved Gas Analysis (Ethylene)		
		Dissolved Gas Analysis (Acetylene)		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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### Group-: Cable Testing

S. No.	Material/Products	Component/Parameter / Characteristic tested	Test Method Specification against which tests are performed	Equipment Used
33	5 kV to 46 kV Extruded Electric Power Cables	Dicumyl Peroxide	TM-XLPE/02  By Gas Chromatography	Gas Chromatography Mass Spectrometer
		AlphAlpha Methyl Styrene (2-Phenyl Propane)		
		Acetophenone		
		Alpha Cumyl Alcohol (2 phenyl Propane-2 ol)		
		Oxidation induction time (OIT)	ASTM D3895 (Optical Induction Time Tester)	Differential Scanning Calorimetry (Oxidation Induction Time Tester)

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Validity 29.08.2023 to 16.06.2024 Amended on 22.01.2024

### ELECTRICAL TESTING (Laboratory Based)

S. No.	Material/Products	Component/Parameter/ Characteristic tested	Test Method	Equipment Used
<b>Group: Cables</b>				
34	Electrical Cables for photovoltaic system	Sheath resistance against acid and alkaline solution	BS EN 50618:2014, IEC 62930:2017	Tensile testing machine
35	300/500 V fire resistant screened cables having low emission of smoke and corrosive gases when affected by fire: Multicore and multipair cables	Conductor Resistance	BS EN 7629-1:2015	Senior Industrial Kelvin Bridge
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		-----
		Resistance to fire alone (Protocol C)		-----
		Resistance to fire to with water (Protocol W)		-----
		Resistance to fire with mechanical shock (Protocol Z)		-----
		Resistance to fire with mechanical shock and water spray (Classification		-----

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		PH15, PH30, PH60, PH90, PH120)		
		Smoke Density under Fire Conditions		-----
		Test under Fire Conditions / Flammability Test		-----
36	Aerial Bunched Cables for working voltages upto and including 1100V	Ageing in Air Oven	IS 14255:1995(RA:2020)	-----
		Bending Test		-----
		Breaking load on Messenger Conductor		Digital tensile testing machine
		Carbon Content Test		-----
		Conductor Resistance		Industrial kelvin double Bridge
		Elongation on Messenger Conductor		Digital tensile testing machine
		High Voltage test at room temperature		HV tester
		Hot Set Test		-----
		Insulation Resistance		Million mega ohm meter
		Shrinkage Test		-----

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		Tensile strength and elongation at break on Insulation and Sheath		Digital tensile testing machine
		Tensile Strength for Aluminium Wires		Digital tensile testing machine
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		Digital vernier calliper
		Vicat Softening Point		-----
		Water Absorption Test (Gravimetric)		-----
		Wrapping Test for Aluminium Wires		-----
37	Aerial Bundled Conductors - Performance of Supporting Cores under Mechanical and Thermal Stresses	Performance of Supporting Cores	SANS 6100:2007	Thermal stress-Strain test apparatus
38	Aluminium Conductors – Galvanized Steel – Reinforced for extra high voltage (400 kV & above)	Breaking load of Individual wires	IS 398(Part 5):1992(RA:2018)	Digital tensile testing machine
		Diameter of Aluminium , Steel wires & Stranded Conductor		Digital micrometer

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		Ductility test (Torsion test and Elongation test)		Torsion tester
		Galvanizing Test on steel wire (Uniformity of Zinc Coating & Weight of Zinc Coating)		-----
		Lay Ratio		-----
		Resistance test of Aluminium wires		Industrial kelvin double Bridge
		Surface Condition Test		-----
		Wrapping test for Aluminum & Aluminized Wires		-----
39	Aluminium Conductors for overhead transmission purpose (Aluminium Alloy Stranded Conductors) [Al. – Magnesium – Silicon Type]	Diameter of Aluminium, Steel wires & Stranded Conductor	IS 398(Part 4):1994(RA:2021)	Digital micrometer, Digital tensile testing machine, Industrial kelvin double bridge
		Elongation Test		
		Resistance test of Aluminium wires		
40	Aluminium Conductors for overhead transmission purpose (Aluminium	Breaking load of Individual wires	IS 398(Part 4):1994(RA:2021)	Digital Tensile testing machine
		Breaking load of Individual wires	IS 398(Part 3):1976(RA:2019)	Digital micrometer,

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	Conductors, Aluminized Steel Reinforced)	Diameter of Aluminium , Steel wires & Stranded Conductor		Digital tensile testing machine, Industrial kelvin double bridge
		Ductility test (Torsion test and Elongation test		
		Lay Ratio		
		Resistance test of Aluminium wires		
		Wrapping test for Aluminized Wires		
		Wrapping test for Aluminum Wires		
41	Aluminium Conductors for Overhead Transmission Purposes	Breaking load of Individual wires	IS 398 (Part 1):1996(RA:2018)	Digital micrometer, Digital tensile testing machine, Industrial kelvin double bridge
		Diameter of Aluminium wires		
		Lay Ratio		
		Resistance test of Aluminium wires		
		Wrapping test for Aluminum wires		
42	Aluminium Conductors for Overhead Transmission Purposes	Resistance test of Aluminium wires	IS 398(Part 2):1996(RA:2018)	Digital micrometer, Digital tensile testing machine,
		Breaking load of Individual wires		

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	- Aluminium Conductors, galvanized steel-reinforce	Diameter of Aluminium & Steel wires		Industrial kelvin double bridge
		Ductility test (Torsion test and Elongation test)		
		Galvanizing Test on steel wire (Uniformity of Zinc Coating & Weight of Zinc Coating)		
		Lay ratio		
		Wrapping test for Aluminum wires		
43	Armoured Cables with Thermosetting Insulation for rated voltages from 3.8/6.6 kV to 19/33 kV	Ageing in Air Oven	BS 6622:2007	-----
		Bending Test		-----
		Cold Impact Test		-----
		Compatibility Test		-----
		Conductor Resistance		-----
		Dielectric Power Factor Test as a function of voltage		Ten delta test set
		Elongation Test at Low Temperature		-----
		Heat Cycle Test		Heating cycle test apparatus
		Heat Shock Test		Hot air oven

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		High Voltage Test (4 Hour Test)		HV Tester
		High Voltage test at room temperature		-----
		Hot deformation test / Pressure Test at High Temperature		-----
		Hot Set Test		-----
		Impulse Withstand Test		-----
		Loss of Mass		-----
		Partial Discharge Test		PD test setup
		Power Factor Test as a function of temperature		Ten delta test set
		Tensile strength and elongation at break on Insulation and Sheath		-----
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		-----
		Test on extruded semi conducting screens- Volume Resistivity		Digital Ohm meter
		Water Absorption Test (Gravimetric)		-----

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44	Armoured Cables with Thermosetting Insulation having low emission of smoke and corrosive gases when affected by fire	Ageing in Air Oven	BS 7835:2007	-----
		Bending Test		
		Bending Test at low Temperature		
		Cold Impact Test		
		Conductor Resistance		
		Dielectric Power Factor Test as a function of voltage		
		Dimension for Armoring Material		
		Elongation Test at Low Temperature		
		Flame Retardance Test on Bunched cable		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		Heat Cycle Test		
		High Voltage Test (4 Hour Test)		
		High Voltage test at room temperature		

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		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Impulse Withstand Test		
		Insulation Resistance		
		Mass of Zinc Coating		
		Partial Discharge Test		
		Power Factor Test as a function of temperature		
		Shrinkage Test		
		Smoke Density under Fire Conditions		
		Tensile strength & Elongation at break for armouring material		
		Tensile strength and elongation at break on Insulation and Sheath		
		Tensile Strength for Aluminium Wires		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		

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		Test under Fire Conditions / Flammability Test		
		Water Absorption Test (Gravimetric)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		-----
45	Armouring material of electric cables	Dimension for Armouring Material	IS 10810 (Part 36):1984(RA:2021)	-----
46	Bundled assembled cores for overhead system of rated voltages 0.6/1.0 kV	Absence of capillary water rising	NFC 33-209:1982	-----
		Dielectric strength		
		Adhesion of Neutral Core Sheath		
		Behaviour of neutral core under thermal and mechanical stresses		Thermal Stress-strain test apparatus
		Breaking Force of Conductors		
		Dimensions of Conductors		
		Dimensions of Insulating sheath		-----
		Hot Set Test		
		Impulse Voltage Test		

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		Insulation Resistance		Million mega ohm meter
		Minimum Tensile Strength and Minimum Elongation of Insulating Sheath		-----
		Perforation susceptibility of insulating sheath		
		Shrinkage Test		
		Stranding Pitch of Conductors		
		Weather Resistance		UV test apparatus
47	Cables	Assessing the ability of unenclosed sheathed cables and non-metallic wiring enclosures to withstand cutting action	AS/NZS 3013:2005(R2020)	-----
		Circuit integrity against mechanical damage		
		Circuit integrity under fire condition		
		Circuit integrity when subject to both fire conditions and spraying with water		
		Water Treeing Test	IEEE 1407:2021	HV tester and Treeing test apparatus

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48	Cables for control and instrumentation circuits 150/250 V (300 V)	Additional aging test on pieces of complete cable	IEC 60092-376:2017	
		Bunched cable flame spread test		-----
		Cable dimension		
		Conductor resistance		
		Coverage density of braid		
		Fire resistance test (test for circuit integrity cables)		FS test setup
		High voltage test		-----
		Hot set test		
		Inductance to resistance ratio		LCR meter
		Insulation resistance test		Million mega ohm meter
		Mutual capacitance		LCR meter
		Smoke emission test		-----
		Thickness of insulation and sheath		
49	Cables for general applications. Flexible cables with crosslinked elastomeric insulation	Bending Test at Low Temperature	BS EN 50525-2-21:2011	- ----
		Insulation Resistance		Million mega ohm meter

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50	Cables for general applications. Flexible cables with thermoplastic PVC insulation	Insulation Resistance	BS EN 50525-2-11:2011	Million mega ohm meter
51	Cables for Motor Vehicle	Ageing in Air Oven	IS 2465:1984(RA:2021)	-----
		Annealing Test for Copper Wire		
		Capacitance Test		LCR meter
		Conductor Resistance		Industrial kelvin double Bridge
		Effect of lubricating oil, break fluid, diesel, petrol (for general wiring cables)		-----
		Heat Shock Test		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Loss of Mass		
		Oil Resistance Test		

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		Ozone Resistance Test		Ozone Chamber
		Persulphate Test/ Tinning Test		-----
		Shrinkage Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
52	Cables for rated voltages from 6 kV (Ur= 7,2 kV) up to 30 kV (Ur =36 kV)	Water Penetration Test	IEC 60502-2:2014	
53	Cadmium Copper Conductor	Electrical Resistance	ETI/OHE/50(6/97)	Industrial kelvin double bridge
		Lay ratio		-----
		Tensile strength		Tensile testing machine
		Wrapping test		-----
		Diameter of individual wire		
		Lay length		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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54	Carbon Black Content in Olefin Plastics	Carbon Content Test	ASTM D1603:20	Carbon black test apparatus
55	Charging cables for electric vehicles	Bending at low temperature	IEC 62893-1:2017	-----
		Elongation at break		-----
		Elongation at low temperature		
		Hot set test		
		Pressure test at high temperature		
		Tensile strength		
56	Choice of test criteria	Thermal Endurance Test	IEC 60216-2:2005	-----
57	Communication cable	Capacitance Test	BS EN 50289-1-5:2001	LCR Meter
		Inductance Test	BS EN 50289-1-12:2005, BS EN 50289-1-2:2001	
		Conductor Elongation at Break	BS EN 50289-3-2:2001	-----
		Conductor Resistance	BS EN 50289-1-2:2001	Kelvin Double Bridge
		DC resistance test	BS EN 50289-1-2:2001	-----
		Dielectric test	BS EN 50289-1-3:2001	

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		Insulation resistance	BS EN 50289-1-4:2001	Million mega ohm meter
58	Compounds for cables and pipes / ducts	Anti rodent test	NPCIL specification I28.KK34.0.0.ET.PM.PR07 2	-----
			RDSO/SPN/TC/45	
		Anti termite test	NPCIL specification I28.KK34.0.0.ET.PM.PR07 2	
			RDSO/SPN/204	
59	Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft	Density	ASTM B8-11(2017)	-----
		Diameter		
		Lay length		
		Resistance		
60	Conductors - Covered overhead - For working voltages 6.35/11(12) kV up to and including 19/33(36) kV	Adhesion test	AS/NZS 3675:2002(R2017)	-----
		Carbon black dispersion		
		Dripping test		
		Dynamic water blocking test		
		High voltage test		
		Inter stand conductivity test		
		Resistivity test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Spark test		Spark tester
		Static water blocking test		-----
		Thickness of covering		
		Ultimate tensile stress test		
		UV test		UV apparatus
		Wire diameter		-----
		Wrapping test		
61	Conductors for overhead lines - Round wire concentric lay stranded conductors	Adhesion of zinc coating	BS EN 50182:2001	
		Elongation test		
		Inertness		
		Lay ratio and direction of lay		
		Mass of zinc coating		
		Resistivity		
		Tensile strength		-----
		Torsion test		
		Wrapping test		
		Zinc dip test		
		Diameter		
		Nominal d.c. resistance		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

62	Conductors in insulated electric cables and flexible cords	Conductor diameter	AS/NZS 1125:2001(R2017)	-----
		Conductor resistance		
63	Conductors of Insulated Cables	Conductor Resistance	BS EN 60228:2005, IEC 60228:2004	-----
		Persulphate Test/ Tinning Test		
		Tensile Strength for Aluminium Wires		Tensile testing machine
64	Control and Instrumentation Cables for Polyethylene Insulated Cables	Ageing in Air Oven	PAS 5308-1:2009	-----
		Capacitance Test		LCR Meter
		Conductor Resistance		-----
		Dimension for Armouring Material		
		Heat Shock Test		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Inductance Test		
		Insulation Resistance		
		L/R Ratio Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Loss of Mass		Air oven & Weighing balance
		Mass of Zinc Coating		-----
		Resistivity & Conductance test of Armour (Wires/strips)		Digital ohm meter
		Shrinkage Test		-----
		Tensile strength & Elongation at break for armouring material		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

65	Control and Instrumentation Cables for PVC Insulated cables	Ageing in Air Oven	PAS 5308-2:2009	-----
		Capacitance Test		
		Conductor Resistance		
		Dimension for Armouring Material		
		Heat Shock Test		
		High Voltage test at room temperature		
		Inductance Test		
		Insulation Resistance		
		L/R Ratio Test		
		Loss of Mass		
		Mass of Zinc Coating		
		Pressure Test at High Temperature		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Shrinkage Test		
		Tensile strength & Elongation at break for armouring material		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
66	Copper	Copper Purity Test	IS 191:2007(RA:2021), IS 440:1964(RA:2018)	-----
67	Copper and aluminium conductors	Conductor Resistance	IS 10810(Part 5):1984(RA:2021)	-----
68	Copper and Copper cadmium conductor	Conductivity	BS 7884:1997	-----
		Dimension		
		Electrical resistance		
		Lay length		
		Lay ratio		
		Tensile strength		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Wire diameter		
		Wrapping test		
69	Covered conductors for overhead lines and the related accessories for rated voltages above 1 kV AC and not exceeding 36 kV AC Covered conductors	Carbon Black Content	BS EN 50397-1:2020	-----
		Ageing in Air Oven		
		Compliance with Constructional requirements		
		Conductor Resistance		
		Construction and dimensions of the conductor		
		Content, Legibility of Marking		
		Durability of Marking		
		High Voltage Test		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Leakage Current		
		Rated Tensile Strength of the conductor		
		Resistance to UV Rays		

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IMT Manesar, Gurugram (Haryana)-122050

		Shore D Hardness		
		Shrinkage Test		
		Slippage Test		
		Tensile Strength & Elongation at Break		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test of Compatibility (Ageing of complete product sample)		
		Test of longitudinal Water Tightness		
		Thickness of the covering		
		Tracking Resistance		
		UV Test		
		Water Absorption Test		
70	Cross Linked Polyethylene Insulated Thermoplastic Sheathed cables for working voltages from 3.3 kV to 33 kV	Impulse Withstand Test	IS 7098 (Part 2):2011(RA:2021)	-----
		Bending Test		
		Carbon Content Test		
		Dielectric Power Factor Test as a function of temperature		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Dielectric Power Factor Test as a function of voltage		
		Heat Cycle Test		
		High Voltage Test (4 Hour Test)		
		Partial Discharge Test		
		Test on extruded semi conducting screens-Test for Strip ability of semiconducting strippable insulation screen		
		Test on extruded semi conducting screens-Volume Resistivity		
		Thermal ageing test for complete cable/ Additional Ageing Test on pieces of Completed Cables		
		Annealing Test for Copper Wire		
		Tensile Strength for Aluminium Wires		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Tensile strength & Elongation at break for armouring material		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
		Ageing in Air Oven		
		Armour Coverage Percentage Test		
		Cold Impact Test		
		Conductor Resistance		
		Dimension for Armouring Material		
		Flame Retardance Test on Bunched cable		
		Flame Retardant Test on Single cable (Swedish Chimney)		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		Heat Shock Test		
		Hot Set Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Insulation Resistance		
		Loss of Mass		
		Mass of Zinc Coating		
		Oxygen Index Test		
		Resistance Test for Armour (for Mining Cables)		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Shrinkage Test		
		Temperature Index Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
		Water Absorption Test (Gravimetric)		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
		Wrapping Test for Aluminium Wires		
71	Cross Linked Polyethylene Insulated Thermoplastic Sheathed cables for working voltages from 66 kV upto and including 220 kV	Annealing test for copper wire	IS 7098 (Part 3):1993(RA:2019)	-----
		Bending Test followed by PD Test		
		Carbon Black Content		
		Diameter of Armour Wire		
		Dielectric Power Factor and Capacitance Measurement at ambient temperature		
		Dielectric Power Factor measurement at elevated temperature		
		Elongation at break for armouring material		
		Flammability Test (For PVC Outer Sheath only)		
		Heat Shock Test		
		Hot Deformation Test		
		Hot Set Test		

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Laboratory Name      M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Impulse Withstand Test followed by HV Test		
		Load Cycle test followed by PD Measurement		
		Longitudinal Water Tightness Test		
		Loss of Mass test		
		Partial Discharge Test		
		Resistance Test / Conductor Resistance		
		Resistivity Test for semi conducting layers		
		Resistivity Test on Armour		
		Shrinkage Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Tensile strength for Aluminum Wires		
		Tensile strength for armouring material		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		

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		Thermal ageing in air oven		
		Thermal ageing test for complete cable		
		Thermal Stability		
		Thickness of Metallic Sheath		
		Void and Contamination Test		
		Wrapping Test		
		Wrapping test for Aluminum wires		
72	Cross Linked Polyethylene Insulated Thermoplastic Sheathed cables for working voltages upto and including 1100 V	Annealing Test for Copper Wire	IS 7098 (Part 1):1988(RA:2020)	-----
		Ageing in Air Oven		
		Armour Coverage Percentage Test		
		Cold Bend Test		
		Cold Impact Test		
		Conductor Resistance		
		Dimension for Armouring Material		
		Flame Retardance Test on Bunched cable		

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Laboratory Name      M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Flame Retardant Test on Single cable (Swedish Chimney)		
		Flammability Test		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		Heat Shock Test		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Insulation Resistance		
		Loss of Mass		
		Mass of Zinc Coating		
		Oxygen Index Test		
		Resistance Test for Armour (for Mining Cables)		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Shrinkage Test		

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Laboratory Name      M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Temperature Index Test		
		Tensile strength & Elongation at break for armouring material		
		Tensile strength and elongation at break on Insulation and Sheath		
		Tensile Strength for Aluminium Wires		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Thermal Stability		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
		Water Absorption Test (Gravimetric)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
		Wrapping Test for Aluminium Wires		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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73	Crosslinked Ethylene Plastics	Determination of Gel Content and Swell Ratio of Crosslinked Ethylene Plastics	ASTM D 2765:16	-----
74	Dielectric material of electric cables	Dielectric Power Factor Test as a function of voltage	IS 10810 (Part 48):1984(RA:2021)	-----
75	Distribution Cables (Single Core) with extruded insulation of rated voltages of 11 kV to 33 kV	Abrasion Test	BS 7870-4.10:2011	-----
		Bending Test		
		Cold bend Test / Voltage Test after bending		
		Compatibility Test		
		Conductor Resistance		
		Dielectric Power Factor Test as a function of voltage		
		Flame Propagation (Retardance) Test on Multiple (Bunched) cables		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		Heat Cycle Test		
		High Voltage Test (4 Hour Test)		
		Hot Set Test		

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		Impulse Withstand Test		
		Long Duration Test		
		Long Duration Test	BS 7870-4.20:2011	-----
		Measurement of Thickness of Insulation & Sheath	BS 7870-4.10:	-----
		Partial Discharge		
		Power Factor Test as a function of temperature		
		Resistivity of Conductor Screen		
		Shrinkage Test		
		Smoke Density under Fire Conditions		
		Test on extruded semi conducting screens-Test for Strippability of semiconducting strippable insulation screen		
		Test on extruded semi conducting screens-Volume Resistivity		
		Tests on Water Blocking Tape		
		Water Penetration Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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76	Distribution Cables (Three Core) with extruded insulation of rated voltage of 11 kV to 33 kV	Impulse Withstand Test	BS 7870-4.20:2011	-----
		Abrasion Test		
		Bending Test		
		Compatibility Test		
		Conductor Resistance		
		Dielectric Power Factor Test as a function of voltage		
		Flame Propagation (Retardance) Test on Multiple (Bunched) cables		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		Heat Cycle Test		
		High Voltage Test (4 hour Test)		
		Hot Set Test		
		Measurement of Thickness of Insulation & Sheath		
		Partial Discharge Test		
		Power Factor Test as a function of temperature		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Resistivity of Conductor Screen		
		Shrinkage Test		
		Smoke Density under Fire Conditions		
		Test on extruded semi conducting screens-Test for Strippability of semiconducting strippable insulation screen		
		Test on extruded semi conducting screens-Volume Resistivity		
		Water Penetration Test		
77	Elastomer Insulated Cables (with Limited Circuit Integrity when affected by Fire) for working voltages up to and including 1100 Volts	Ageing in air bomb	IS 16246:2015(RA:2020)	-----
		Ageing in air oven on insulation and sheath		
		Annealing test (for copper)		
		Circuit integrity test under fire condition		
		Conductor resistance test		
		Dimension of armoring material		
		Elongation at break for armoring material		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Elongation at break of insulation and sheath before and after ageing		
		Flame retardant on bunched cable		
		Flame retardant test on single cable		
		High voltage test on insulation		
		Hot set test on insulation and sheath		
		Insulation resistance test		
		Mass of zinc coating		
		Oxygen index test on sheath		
		Persulphate test for tinned copper		
		Resistivity of armour (wires/strips)		
		Temperature index test on sheath		
		Tensile strength for armoring material		
		Tensile strength of insulation and sheath,		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		before ageing and after ageing		
		Test of acid gas generation on sheath		
		Test of overall dimensions and thickness of insulation and sheath		
		Torsion test on galvanized steel wire for armoring		
		Uniformity of zinc coating (Dip test)		
		Water absorption test (for insulation)		
		Winding / Wrapping test on galvanized steel grip for armoring		
78	Elastomer Insulated Cables for working voltages from 3.3 kV to 33 kV	Bending Test	IS 9968 (Part 2):2002(RA:2017)	
		Cold Impact Test		
		Dielectric Power Factor Test as a function of temperature		
		Dielectric Power Factor Test as a function of voltage		
		Dimension for Armouring Material		

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118-119, First Floor, Sushant Tower, Sector – 56, Gurugram – 122011, Haryana, India.



## SCOPE OF ACCREDITATION

(Annexure to Certificate of TL – 101)

Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Heat Cycle Test		-----
		Heat Shock Test		
		High Voltage Test (4 Hour Test)		
		Hot deformation test / Pressure Test at High Temperature		
		Impulse Withstand Test		
		Loss of Mass		
		Mass of Zinc Coating		
		Ozone Resistance Test		Ozone chamber
		Partial Discharge Test		-----
		Resistivity & Conductance test of Armour (Wires/strips)		
		Shrinkage Test		
		Tensile strength & Elongation at break for armouring material		
		Thermal Stability		
		Torsion Test on Galvanized steel wire for Armouring		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Uniformity of Zinc coating (Dip Test)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
		Insulation Resistance		Million mega ohm meter
		Accelerated Water Absorption Test (Electrical)		-----
		Ageing in Air Bomb		
		Ageing in Air Oven		
		Annealing Test for Copper Wire		
		Conductor Resistance		Senior Industrial Kelvin Bridge
		Hot Set Test		-----
		Oil Resistance Test		
		Persulphate Test/ Tinning Test		
		Tear Resistance		Tensile testing machine
		Tensile strength and elongation at break on Insulation and Sheath		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Tensile Strength for Aluminium Wires		-----
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Wrapping Test for Aluminium Wires		
79	Elastomer Insulated Cables for working voltages up to and including 1100 Volts	Assessment of halogen on insulation and sheath - pH test	IEC/BS EN 60684-2:2011	pH & Conductivity meter
		Ageing in air bomb	IS 10810 (Part 56):1987(RA:2017)	-----
			IS 6380:1984(RA:2021)	
		Ageing in air oven on insulation and sheath	IS 10810 (Part 11):1984(RA:2021)	
		Annealing test (for copper)	IS 10810 (Part 1):1984(RA:2021)	Tensile testing machine
		Assessment of halogen on insulation and sheath - pH test	BS EN 50525-1:2011	-----
			IEC 60754-2:2011	
		Assessment of halogen on insulation and sheath - Chlorine and bromine	BS EN 50525-1:2011	
			IEC/BS EN 60684-2:2011	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		content expressed as content of HCL		
		Assessment of halogen on insulation and sheath - Conductivity test	BS EN 50525-1 IEC/BS EN 60684-2:2011	
		Assessment of halogen on insulation and sheath - Fluorine content	BS EN 50525-1:2011 IEC/BS EN 60684-2:2011	
		Assessment of halogen on insulation and sheath - Presence of fluorine	BS EN 50525-1:2011 IEC/BS EN 60684-2:2011	
		Circuit integrity test under fire condition	IEC 60331-21:1999	
		Cold bend test on finished cable	IS 10810 (Part 20):1984(RA:2021)	
		Cold impact test on insulation and finished cable	IS 10810 (Part 21):1984(RA:2021)	
		Conductivity Test	IEC 60754-2:2011	
		Conductor resistance test	IS 10810 (Part 5):1984(RA:2021)	Senior Industrial Kelvin Bridge
		Dimension for armouring material	IS 10810 (Part 36):1984(RA:2021)	
		Elongation at break for armouring material	IS 10810 (Part 37):1984(RA:2021)	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Elongation at break of insulation and sheath before aging	IS 6380:1984(RA:2021)	-----
		Elongation at break of insulation and sheath, before and after ageing	IS 10810 (Part 11):1984(RA:2021)	
		Elongation at break of insulation and sheath, before and after ageing	IS 10810 (Part 7):1984(RA:2021)	
		Flame retardant test on bunched cable	IS 10810 (Part 62):1993(RA:2019)	
		Flame retardant test on single cable	IS 10810 (Part 61):1988(RA:2020)	Flammability test apparatus
		Flammability test on finished cable	IS 10810 (Part 53):1984(RA:2021)	-----
		High voltage test on insulation and finished cable	IS 10810 (Part 45):1984(RA:2021)	
		Hot deformation on insulation and sheath	IS 10810 (Part 15):1984(RA:2021)	
		Hot set test on insulation and sheath	IS 10810 (Part 30):1984(RA:2021)	
			IS 6380:1984(RA:2021)	
		Insulation Resistance test	IS 10810 (Part 43):1984(RA:2021)	Million mega ohm meter
			IS 6380:1984(RA:2021)	-----

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Mass of zinc coating	IS 10810 (Part 41):1984(RA:2021)	
		Oxygen index test on insulation and sheath	IS 10810 (Part 58):1998(RA:2019)	
		Ozone resistance test on insulation and sheath	IS 10810 (Part 13):1984(RA:2021)	
		Persulphate test for tinned copper	IS 10810 (Part 4):1984(RA:2021)	
		Resistivity test of armour (Wires/strips)	IS 10810 (Part 42):1984(RA:2021)	
		Smoke density test on finished cable	IS 10810 (Part 63):1993(RA:2019)	3 m cube chamber - smoke density test apparatus
		Temperature index test on insulation and sheath	IS 10810 (Part 64):2003(RA:2018)	-----
		Tensile strength for armouring material	IS 10810 (Part 37):1984(RA:2021)	
		Tensile strength of insulation and sheath, before ageing	IS 6380:1984(RA:2021)	
		Tensile test (for aluminium)	IS 10810 (Part 2):1984(RA:2021)	
		Test of acid gas generation on sheath	IS 10810 (Part 59):1988(RA:2020)	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Test of overall dimensions and thickness of insulation and sheath	IS 10810 (Part 6):1984(RA:2021)	
		Torsion Test on Galvanized steel wire for Armouring	IS 10810 (Part 38):1984(RA:2021)	
		Uniformity of Zinc coating (Dip Test)	IS 10810 (Part 40):1984(RA:2021)	
		Water absorption test (for insulation)	IS 10810 (Part 28):1984(RA:2021)	
		Winding/ Wrapping Test on Galvanized steel strip for Armouring	IS 10810 (Part 40):1984(RA:2021)	
		Wrapping test (for aluminium)	IS 10810 (Part 3):1984(RA:2021)	
		Accelerated Water Absorption Test (Electrical)	IS 9968 (Part 1):1988(RA:2020)	Tendelta & capacitance bridge
		Ageing in Air Bomb	IS 9968 (Part 1):1988(RA:2020)	-----
		Ageing in Air Oven		
		Ageing in Oxygen Bomb		
		Annealing Test for Copper Wire		
		Conductor Resistance		
		Flexing Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		High Voltage test (Water immersion)		
		Hot Set Test		
		Insulation Resistance		
		Oil Resistance Test		
		Persulphate Test/ Tinning Test		
		Tear Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Tensile Strength for Aluminium Wires		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Wrapping Test for Aluminium Wires		
80	Elastomer Insulated Flexible Cables used in Mines	Accelerated Water Absorption Test (Electrical)	IS 14494:2019	Ten delta & capacitance bridge
		Ageing in Air Bomb		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Ageing in Air Oven		-----
		Annealing Test for Copper Wire		
		Bending Test		
		Conductor Resistance		Senior Industrial Kelvin Bridge
		Dielectric Power Factor Test as a function of temperature		-----
		Dielectric Power Factor Test as a function of voltage		
		Dimension for Armouring Material		
		Heat Cycle Test		
		High Voltage test (Water immersion)		
		High Voltage Test (4 Hour Test)		
		Insulation Resistance		
		Mass of Zinc Coating		
		Oil Resistance Test		
		Ozone Resistance Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Partial Discharge Test		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Tear Resistance		
		Tensile strength & Elongation at break for armouring material		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test on extruded semi conducting screens-Test for Strippability of semiconducting strippable insulation screen		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
81	Elastomeric heavy duty sheathed cables	Tear Resistance	IS 10810 (Part 17):1986(RA:2021)	-----

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

82	Elastomeric Insulation and Sheath of Electric Cables	Ageing in Air Bomb	IS 6380:1984(RA:2021)	-----
83	Electric and Communication cable	Damp Heat Test	BS EN 60068-2-78:2013 IEC 60068-2-78:2012	-----
84	Electric and optical fibere cables	Flame Retardance Test on Bunched cable	IEC 60332-3-21:2018 IEC 60332-3-22:2018 IEC 60332-3-23:2018 IEC 60332-3-24:2018 IEC 60332-3-25:2018	-----
		Test under Fire Conditions / Flammability Test	BS EN 60332-1-2:2004 IEC 60332-1-2:2004	
		Cold Impact Test	IEC/BS EN 60811-506:2012	
		Compatibility Test	IEC/BS EN 60811-401:2012	
		Heat Shock Test	IEC/BS EN 60811-509:2012	
		Loss of Mass	IEC/BS EN 60811-409:2012	
		Pressure Test at High Temperature	IEC/BS EN 60811-508:2012	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Ageing in Air Bomb	IEC/BS EN 60811 (Part 412):2012
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions	IEC/BS EN 60811-201:2012
		Ageing in Air Oven	IEC/BS EN 60811-401:2012
		Bending Test at low Temperature	IEC/BS EN 60811 (Part 504):2012
		Cold Elongation Test / Elongation at low temperature	IEC/BS EN 60811-505:2012
		Cold Impact Test	IEC/BS EN 60811-506:2012
		Conductivity Test	AS/NZS 3808:2000(R:2017)
			IEC 60754-2:2011
		Flame Retardance Test on Bunched cable	IS 10810 (Part 62):1993(RA:2019)
		Flame Retardant Test on Single cable (Swedish Chimney)	IS 10810 (Part 61):1988(RA:2020)
		Hot Set Test	IEC/BS EN 60811-507:2012
		Insulation Resistance	IEC/BS EN 60811-301:2012

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

			IEC/BS EN 60811-302:2012	-----
		Oil Resistance Test	IEC/BS EN 60811-404:2012	
		Sheath resistance against acid and alkaline solution		
		Ozone Resistance Test	IEC/BS EN 60811-403:2012	
		pH Test	IEC 60754-2:2011	
		Shrinkage Test	IEC/BS EN 60811-502:2012	
			IEC/BS EN 60811-503:2012	
		Tensile strength and elongation at break on Insulation and Sheath	IEC/BS EN 60811-501:2012	
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions	IEC/BS EN 60811-202:2012	
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions	IEC/BS EN 60811-203:2012	
		Test under Fire Conditions / Flammability Test	IS 10810 (Part 53):1984(RA:2021)	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Thermal Stability	IEC/BS EN 60811-405:2012	
		Water Absorption Test (Gravimetric)	IEC/BS EN 60811-402:2012	
85	Electric and optical fibre cables and compound	Toxicity Index	NES 713 : 2000	Toxicity test apparatus
86	Electric cable	Test for electric cables under fire conditions- Circuit Integrity	IEC 60331-21:1999	FS Test apparatus
		Ageing in Air Oven	IS 10810 (Part 11):1984(RA:2021)	-----
		High Voltage test (Water immersion)	IS 10810 (Part 45):1984(RA:2021)	
		High Voltage test at room temperature		
		Impulse Withstand Test	IS 10810 (Part 47):1984(RA:2020)	Impulse test set
		Insulation Resistance	IS 10810 (Part 43):1984(RA:2021)	-----
		Maximum value of smoke production	BS EN 50399:2022	CPR test apparatus
		Oxygen	BS EN 50399:2022	
		Shrinkage Test	IS 10810 (Part 12):1984(RA:2021)	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Tensile strength and elongation at break on Insulation and Sheath	IS 10810 (Part 7):1984(RA:2021)	-----
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions	IS 10810 (Part 6):1984(RA:2021)	
		Thermal Stability	IS 10810 (Part 60):1988(RA:2020)	
		Total heat release	BS EN 50399:2022	CPR test apparatus
		Total smoke production		
		Carbon dioxide		-----
		Droplets and/or Particles		
87	Electric cable-Polymeric insulated for working voltages 0.6/1 (1.2) kV	Compatibility test	AS/NZS 5000.1:2005(R:2017)	-----
		Conductor resistance		
		High voltage a.c. test for 4 hour		125kV / 80 kV AC HV test set
		Legibility of marking on outer surface		-----
		Measurement of armour dimension		
		Measurement of insulation thickness		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Measurement of thickness of over sheath		
		Vertical flame propagation		
88	Electric cable- Polymeric insulated for working voltages 1.9/3.3 (3.6) kV up to and including 19/33 (36) kV	Adhesion of hand strippable extruded screen	AS/NZS 1429.1:2006(R:2017)	-----
		Bending test		
		Compatibility test		
		Concentricity		
		Heating cycle test		
		High voltage test		
		Hot set test		
		Partial discharge test		
		Projection or irregularities at conductor screen/ insulation interface		
		Shrinkage test		
		Stripability of strippable extruded screen		
		Tan delta measurement as a function of at elevated temperature		Capacitance & Ten delta bridge
		Tan delta measurement as a function of voltage		-----

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Thickness of extruded layer		
		Thickness of insulation		
		Volume resistivity of extruded screen		Digital ohm meter
		Water penetration test		-----
89	Electric cables	Accelerated Water Absorption Test (Electrical)	IS 10810 (Part 28):1984(RA:2021)	Capacitance & Ten delta bridge
		Ageing in Air Bomb	IS 10810 (Part 56):1987(RA:2017)	-----
		Ageing in Oxygen Bomb	IS 10810 (Part 16):1986(RA:2021)	
		Anti Rodent & Anti Termite test	AAI Specification	
		Bending Test	IS 10810 (Part 50):1984(RA:2021)	
		Breaking load on Messenger Conductor	IS 10810 (Part 2):1984(RA:2021)	Tensile testing machine
		Conductor Resistance	BS EN 50395:2005	
		Dielectric Power Factor Test as a function of temperature	IS 10810 (Part 48):1984(RA:2021)	
		Fire Growth Rate Index	BS EN 50399:2022	CPR test apparatus

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

	Flame Retardant Test on Single cable (Swedish Chimney)	SS-424-1475:1988	Swedish chimney
	Flammability test (Vertical tray flame test)	IEEE 383:2015	-----
	Flexing Test	IS 10810 (Part 57):1987(RA:2017)	
	Gross heat of combustion	BS EN ISO 1716:2018	
	Heat Cycle Test	IS 10810 (Part 49):1984(RA:2021)	
	High Voltage Test (4 Hour Test)	IS 10810 (Part 45):1984(RA:2021)	
	High Voltage test at room temperature	IS 2071 (Part 2):1974(RA:2006)	
	Hot Set Test	IS 10810 (Part 30):1984(RA:2021)	
	Insulation Resistance	BS EN 50395:2005	
	Long Term Resistance of insulation to d.c.	BS EN 50395:2005	
	Mass of Zinc Coating	IS 10810 (Part 41):1984(RA:2021)	
	Ozone Resistance Test	IS 10810 (Part 13):1984(RA:2021)	Ozone chamber
	Partial Discharge Test	IS 10810 (Part 46):1984(RA:2021)	PD test apparatus

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

	Peak Heat Release Rate	BS EN 50399:2022	CPR test apparatus
	Resistance to fire alone (Protocol C)	BS 6387:2013	FS Test apparatus
	Resistance to fire to with water (Protocol W)		
	Resistance to fire with mechanical shock (Protocol Z)		
	Resistance to fire with mechanical shock	IEC 60331-1:2018	
		IEC 60331-2:2018	
		IEC 60331-3:2018	
	Resistance to fire with mechanical shock and water spray (Classification PH15, PH30, PH60, PH90, PH120)	BS 50200:2015	
		BS 8434-2:2003	
	Resistivity & Conductance test of Armour (Wires/strips)	IS 10810 (Part 42):1984(RA:2021)	-----
	Smoke Density Rating	IS 13360 (Part 6, Sec 9):2001(RA:2021)	
	Smoke Density under Fire Conditions	IS 10810 (Part 63):1993(RA:2019)	
	Spark Test	IS 10810 (Part 44):1984(RA:2021)	spark tester

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

	Static Flexibility	IS 10810 (Part 54):1984(RA:2021)	static flexibility test apparatus
	Surface Resistance of Sheath	BS EN 50395:2005	-----
	Temperature Index Test	IS 10810 (Part 64):2003(RA:2018)	
	Tensile strength & Elongation at break for armouring material	IS 10810 (Part 37):1984(RA:2021)	
	Torsion Test on Galvanized steel wire for Armouring	IS 10810 (Part 38):1984(RA:2021)	
	Uniformity of Zinc coating (Dip Test)	IS 10810 (Part 40):1984(RA:2021)	
	UV test	IEC 60068-2-5:2018	UV test apparatus
	Vertical Flame Spread	BS EN 50399:2022	-----
	Voltage Test on completed cable with a.c. or d.c.	BS EN 50395:2005	
	Water Absorption Test (Gravimetric)	IS 10810 (Part 33):1984(RA:2021)	Weighing balance & Vacuum chamber
	Winding/ Wrapping Test on Galvanized steel strip for Armouring	IS 10810 (Part 39):1984(RA:2021)	-----

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

90	Electric cables - Charging cables for electric vehicles	Absence of faults on insulation	BS EN 50620:2017	-----
		Assessment of halogens	BS EN 50620:2017	
			IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Bending test	IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Bending test at low temperature	IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Check on absence of faults on insulation	BS EN 50620:2017	
		Cold bend test	BS EN 50620:2017	
		Cold elongation test	BS EN 50620:2017	
		Cold Impact test	BS EN 50620:2017	
			IEC 62893-1:2017	
			IEC 62893-2:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Compatibility test	BS EN 50620:2017	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

			IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Conductor Resistance	BS EN 50620:2017	
		Crush resistance test	IEC 62893-1:2017	
			IEC 62893-2:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Determination of saponification value	IEC 62893-1:2017	
			IEC 62893-2:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Elongation at low temperature	IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Flexing test	BS EN 50620:2017	
			IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Heat shock test	IEC 62893-1:2017	
			IEC 62893-3:2017	

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IMT Manesar, Gurugram (Haryana)-122050

			IEC 62893-4-1:2020	
		High voltage water immersion test	BS EN 50620:2017	
		Hot set test	BS EN 50620:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	-----
		Impact test	IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Insulation resistance test	IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Long term resistance of insulation of DC	IEC 62893-2:2017	3 kV/ 80 KV DC test set
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	-----
			IEC 62893-1:2017	
		Long term resistance of power cores of d.c.	BS EN 50620:2017	-----
		Measurement of conductor resistance	IEC 62893-1:2017	-----
			IEC 62893-3:2017	Kelvin Double Bridge
			IEC 62893-4-1:2020	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Measurement of insulation resistance	BS EN 50620:2017	-----
			IEC 62893-1:2017	
		Measurement of overall dimension	IEC 62893-4-1:2020	
			IEC 62893-3:2017	
		Measurement of thickness of insulation and sheath	BS EN 50620:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Overall diameter	IEC 62893-1:2017	Vernier caliper
		Overall dimension	BS EN 50620:2017	
		Ozone resistance test	IEC 62893-1:2017	-----
			BS EN 50620:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Pressure test at high temperature	BS EN 50620:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Resistance against acid and alkaline solution of outer sheath	IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Resistance against chemicals	IEC 62893-2:2017	
		Shore Hardness	HD 605 S2:2008	Shore hardness tester
			IEC 62893-1:2017	-----
			ISO 48-2:2018	
			ISO 48-4:2018	
		Shrinkage test	BS EN 50620:2017	-----
			IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Surface resistance of sheath	BS EN 50620:2017	-----
		Tear resistance test	IEC 62893-1:2017	-----
			IEC 62893-2:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Tensile strength and elongation at break	IEC 62893-3:2017	-----
			IEC 62893-4-1:2020	
		Test under fire condition	BS EN 50620:2017	-----
			IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		UV test	BS EN 50620:2017	-----
		Voltage test on complete cable	BS EN 50620:2017	-----
			IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Voltage test on cores	BS EN 50620:2017	-----
			IEC 62893-1:2017	
			IEC 62893-3:2017	
			IEC 62893-4-1:2020	
		Water resistance test	IEC 62893-1:2017	
			IEC 62893-2:2017	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

			IEC 62893-3:2017	-----		
			IEC 62893-4-1:2020			
		Weathering/UV resistance of outer sheath	IEC 62893-1:2017	-----		
			IEC 62893-2:2017			
			IEC 62893-3:2017			
			IEC 62893-4-1:2020			
		91	Electric cables – Halogen-free, low smoke, thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V	Absence of fault in insulation	IEC 62821-2:2015,IEC 63294:2021	-----
				Ageing test	IEC 62821-1:2015	
Assessment of halogens						
Bending test						
Bending test at low temperature						
Conductor resistance test						
Elongation test at low temperature						
Flexing test for flexible cables						
Insulation resistance						

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Long term resistance of insulation to d.c. voltage	IEC 62821-2:2015, IEC 63294:2021	
		Mechanical strength of flexible cables	IEC 62821-1:2015	
		Overall dimension		
		Pressure test at high temperature		
		Shrinkage test		
		Snatch Test		
		Spark test	IEC 62821-2:2015, IEC 63294:2021	
		Surface resistance of sheath	IEC 62821-2:2015, IEC 63294:2021	
		Tensile strength and elongation at break	IEC 62821-1:2015	
		Test for separation of cores		
		Test under fire conditions		
		Voltage test	IEC 62821-2:2015, IEC 63294:2021	
		Voltage test on complete cable	IEC 62821-1:2015	125/80 kV AC HV test set
		Voltage test on cores		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Voltage test on cores in water	IEC 62821-2:2015, IEC 63294:2021	-----
		Water immersion on sheath		
		Water immersion test	IEC 62821-1:2015	
92	Electric cables — Low voltage energy cables of rated voltages up to and including 450/750 V	Absence of faults in insulation	BS EN 50525-3-11:2011	-----
		Compatibility test		
		Conductor resistance test		
		Insulation resistance test		
		Long term resistance of insulation to d.c.		
		Measurement of overall dimension		
		Measurement of thickness of insulation and sheath		
		Surface resistance to sheath		
		Voltage test on complete cable		
		Voltage test on cores		
		Assessment of halogen		HCL test apparatus
		Flexing test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		High voltage Water immersion test		
		Impact test		-----
		Test under fire condition		
93	Electric Cables for Photovoltaic Systems for Rated Voltage 1500 V d.c.	Thermal endurance test	IS 17293:2020	-----
		Insulation resistance		
		Sheath resistance against acid and alkaline solution		
		Voltage test on complete cable with a.c. or d.c.		
		Ageing in air oven		
		Assessment of halogens		
		Cold bend test		
		Cold impact test		
		Compatibility test		
		Conductor Resistance		
		Continuity of Tin		
		Damp Heat test		
		Diameter of conductor		
		Dynamic Penetration test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Elongation at low temperature		
		Hot set test		
		Insulation and sheath thickness		
		Ovality		
		Ozone resistance test on complete cable		
		Persulphate test		
		Shrinkage test		
		Smoke density under fire condition		
		Surface resistance of sheath		
		Tensile strength and elongation at break on insulation and sheath		
		UV test		
		Vertical flame propagation on complete cable		
		Long term resistance of insulation to d.c.		3/80 kV HV test
94	Electric cables- Cross-linked polyethylene	Conductor diameter	AS/NZS 3560.1:2000(R 2021)	
		Conductor resistance		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

	insulated- Aerial bundled- For working voltages up to and including 0.6/1(1.2) kV	Core diameter		-----
		High voltage test		
		Insulation thickness		
		Rib dimensions		
		Shrinkage test		
		Spark test		
		Water absorption of insulation (Electrical)		
95	Electric flexible cords	Bending test	AS/NZS 3191:2008(R2019)	-----
		Combustion proportion test		
		Compatibility test		
		Flexing test		
		High voltage test		
		Measurement of thickness of insulation and sheath		
		Voltage test		
96	Electric power cables	Resistance to Fire (Category F30, Category F60, Category F120)	BS 8491:2008	FS test apparatus
97	Electric strength of insulating materials	Break down voltage	IEC 60243-1:2013	-----

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

98	Electrical and optical fibre cables	Halogen Acid Gas Evolution / Corrosive & halogen acid gas	IEC 60754-1:2011	-----
		UV Test	BS EN 50289-4-17:2015	
99	Electrical Cables	Durability of Marking	DS/HD 605 S1/A2	-----
		High Voltage Test	HD 605 S1/A2:2001	
		Resistance to UV Rays	BS EN 50397-1:2020	
100	Electrical Cables for photovoltaic systems	Thermal Endurance Test	BS EN 50618:2014 IEC 62930:2017	-----
		Ageing in Air Oven		
		Assessment of halogens for all non-metallic materials		
		Cold Impact Test		
		Compatibility Test		
		Conductor Resistance		
		Continuity of Tin		
		Damp Heat Test		
		Diameter of Conductor		
		Dynamic Penetration Test		

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Laboratory Name      M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Hot Set Test		
		Insulation Resistance		
		Long Term Resistance of insulation to d.c.		
		Measurement of Thickness of Insulation & Sheath		
		Ovality		
		Ozone Resistance Test		
		Shrinkage Test		
		Smoke Density under Fire Conditions		
		Surface Resistance of Sheath		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for vertical flame propagation		
		UV Test		
		Voltage Test on completed cable with a.c. or d.c		
		Cold Bending Test	BS EN 50618:2014	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Cold Elongation Test		
		Bending Test at Low Temperature	IEC 62930:2017	
		Elongation at Low Temperature		
101	Electrical insulating materials	Thermal endurance	IEC 60216-3:2021	-----
			IEC 60216-4-1:2006	
		Thermal endurance test	IS 8504 (Part-1):2012(RA:2017)	
			IS 8504 (Part-2):2013(RA:2018)	
102	Electrical Test Low voltage energy cables	Long Term Resistance of Insulation to d.c.	BS EN 50395:2005	-----
103	Ethylene Plastics	Environmental Stress Cracking Test	ASTM D1693-21	-----
104	extruded dielectric power, control, instrumentation portable cables	Accelerated Water Absorption Test (Electrical)	NEMA WC 53:2000	Capacitance and ten delta bridge
105	Extruded outer sheath armoured cables	Abrasion Test	IS 10810 (Part 55):1986(RA:2021)	Scrape abrasion test apparatus

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

106	Flat Polyvinyl Chloride Sheathed Flexible Cables	Ageing in Air Oven	BS EN 50214:2006	-----
		Bending Test at low Temperature		
		Cold Impact Test		
		Conductor Resistance		
		Elongation Test at Low Temperature		
		Flexing Test		
		Heat Shock Test		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
		Loss of Mass		
		Static Flexibility Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Two pulley Flexing Test		
107	Flexible Cables for Lifts and other flexible Connection (Elastomer Insulated Cable)	Ageing in Air Bomb	IS 4289 (Part 1):1984(2021)	-----
		Ageing in Air Oven		
		Ageing in Oxygen Bomb		
		Conductor Resistance		
		High Voltage test (Water immersion)		
		Insulation Resistance		
		Oil Resistance Test		
		Persulphate Test/ Tinning Test		
		Static Flexibility Test		
		Tear Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
108	Flexible Cables for Lifts and other flexible Connection (PVC Insulated Circular Cable)	Ageing in Air Oven	IS 4289 (Part 2):2000(RA:2020)	-----
		Conductor Resistance		
		Heat Shock Test		
		High Voltage test (Water immersion)		
		Insulation Resistance		
		Loss of Mass		
		Shrinkage Test		
		Static Flexibility Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		

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109	Flexible Cables for Lifts and Other Flexible Connections - Elastomer Insulated Cables	Annealing Test for Copper Wire	IS 4289 (Part 1):1984(RA:2021)	-----
110	Flexible Cables for Lifts and Other Flexible Connections: PVC Insulated Circular Cables	Annealing Test for Copper Wire	IS 4289 (Part 2):2000(RA:2020)	-----
111	Flexible Cables with Thermoplastic PVC Insulation	Ageing in Air Oven	BS EN 50525-2-11:2011	-----
		Bending Test at Low Temperature		
		Conductor Resistance		
		Elongation Test at Low Temperature		
		Flexing Test		
		Heat Shock Test		
		Hot deformation test / Pressure Test at High Temperature		
		Long Term Resistance of Insulation to d.c.		
		Loss of Mass		

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IMT Manesar, Gurugram (Haryana)-122050

		Mechanical Strength of Strain Bearing Member		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
		Voltage Test		
112	Halogen Free Cross-linked Insulating Compounds	Halogen Acid Gas Evolution / Corrosive & halogen acid gas	BS EN 50363-5:2005	-----
113	Halogen Free Flame Retardant (HFFR) cables for working voltages up to and including 1100 Volts	Ageing in air oven on insulation and sheath	IS 17048:2018	-----
		Annealing test for copper		
		Assessment of halogen - Chlorine and bromine content expressed as content of HCL		
		Assessment of halogen - Conductivity test		

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		Assessment of halogen - Fluorine content		
		Assessment of halogen - pH test		
		Assessment of halogen - Presence of fluorine		
		Cold bend test on finished cable		
		Cold impact test on insulation and finished cable		
		Conductor Resistance		
		Elongation at break of insulation and sheath, before and after ageing		
		Flame retardant test on insulation and finished cable		
		Flammability test on finished cable		
		Hot deformation on insulation and sheath		
		Hot set test on insulation and sheath		
		Insulation Resistance		

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		Oxygen Index Test on insulation and sheath		
		Ozone resistance test on insulation and sheath		
		Persulphate test for tinned copper		
		Smoke density test on finished cable		
		Temperature Index test on insulation and sheath		
		Tensile Strength for Aluminium Wires		
		Tensile strength of insulation and sheath, before ageing and after ageing		
		Test of overall dimensions and thickness of insulation and sheath		
		Water immersion test (effect of water on sheath of cable) on finished cable- Elongation at break		
		Water immersion test (effect of water on sheath of cable) on finished cable Tensile Strength		

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		Wrapping test for aluminium		
		High voltage test on insulation and finished cable		
114	Halogen-free, cross- linked insulating compounds	Conductivity Test	BS EN 50363-5:2005	-----
		pH Test		
115	Halogen-free, low smoke, thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V	Assessment of halogens for all non-metallic materials	IEC 62821-1:2015	-----
		Long Term Resistance of insulation to d.c.	IEC 62821-2:2015	
		Surface Resistance of Sheath		
116	High Voltage electric cable	Partial Discharge Test	IS/IEC 60270:2000(RA:2016)	-----
117	Insulated Cables	Measurement of thickness of metallic sheath	IS 10810 (Part 34):1984(RA:2021)	-----
118	Insulating and sheathing materials for electric cables	Ageing in air oven	AS/NZS 3808:2000(R2017)	-----
		Capacitance increase, after immersion in water		
		Carbon black content		
		Carbon black dispersion		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Environmental stress cracking		
		Heat Shock		
		Hot set test		
		Insulation resistance constant		
		Loss of mass test		
		Oil immersion test		
		pH test		
		Pressure test at high temperature		
		Tensile strength and elongation of insulation and sheath		
		Volume resistivity test		
		Water absorption test		
119	Insulating material	Volume resistivity	ASTM D257-14(2021)	-----
120	Insulating, sheathing and covering materials for low voltage energy cables. PVC sheathing compounds	Heat Shock Test	BS EN 50363-4-1:2005	-----

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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121	Insulation and sheath of Electric Cables	Halogen Acid Gas Evolution / Corrosive & halogen acid gas	IS 10810 (Part 59):1988(RA:2020)	-----
122	Insulation/ non metallic sheathing materials	Oil Resistance Test	IS 10810 (Part 31):1984(2021)	-----
123	Low Carbon Galvanized Steel Wires, Formed Wires and Tapes for Armouring of Cables	Adhesion Test	IS 3975:1999(RA:2021)	-----
		Dimension for Armouring Material		
		Mass of Zinc Coating		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Tensile strength & Elongation at break for armouring material		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
124	Low voltage energy cables	Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions	BS EN 50396:2005	

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		Measurement of Thickness of Insulation & Sheath		-----
		Ovality		
		Two pulley Flexing Test		
		Assessment of halogens for all non-metallic materials	BS EN 50525-1:2011	
		Fluorine Test		
		Insulation Resistance		
		Long Term Resistance of Insulation to D.C.		
		Voltage Test		
		Voltage Test on cores		
		Voltage Test on Cores according to Specified Insulation Thickness		
		Surface Resistance of Sheath		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		

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125	Low Voltage Energy Cables – Flexible Cables with cross- linked elastomeric insulation	Ageing in Air Oven	BS EN 50525-2-21:2011	-----
		Conductor Resistance		
		Elongation Test at Low temperature		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Hot Set Test		
		Ozone Resistance Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
126	Low Voltage Energy Cables – Multicore Cables with cross- linked Silicon Rubber insulation	Ozone Resistance Test	BS EN 50525-2-83:2011	
		Ageing in Air Oven		
		Cold Impact Test		
		Conductor Resistance		

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		Elongation Test at Low Temperature		-----
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Hot Set Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
127	Low Voltage Energy Cables – Single Core non-sheathed cables with halogen-free cross-linked insulation and low emission of smoke	Ageing in Air Oven	BS EN 50525-3-41:2011	-----
		Cold Impact Test		
		Conductivity		
		Conductor Resistance		
		Elongation Test at Low Temperature		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		High Voltage test (Water immersion)		

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		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Insulation Resistance		
		Ozone Resistance Test		
		pH		
		Smoke Density under Fire Conditions		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
128	Low voltage energy cables of rated voltage up to and including 450/750V	Absence of faults in insulation	BS EN 50525-2-51:2011	
		Compatibility test		
		Conductor resistance		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Flexing test		
		Impact test at -5°C		
		Insulation resistance		
		Long term resistance of insulation to d.c.		
		Measurement of overall dimensions		
		Measurement of thickness of insulation and sheath		
		Ovality		
		Test under fire conditions (Flammability test)		
		Voltage test on complete cable		
129	LV & MV Polymeric Insulated Cables for use by distribution & generation utilities	Abrasion Test	BS 7870-2:2022	
		Bending Test		
		Long Duration Test		
		Water Penetration Test		
		Cold Bend Test		
		Conductor Diameter		
		Conductor Resistance		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Dielectric Power Factor Test as a function of voltage		-----
		Heat Cycle Test		
		High Voltage Test (4 Hour Test)		
		Impulse Withstand Test		
		Mass of Zinc Coating		
		Partial Discharge Test		
		Power Factor Test as a function of temperature		
		Spark Test		
		Tear Resistance		
		Test on extruded semi conducting screens-Test for Strippability of semiconducting strippable insulation screen		
		UV Test		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
130	LV and MV Polymeric insulated cable	Hardness (Shore A and Shore D)	BS 7870-8.5:2003	-----

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131	LV and MV polymeric insulated cables for use by distribution and generation utilities	Ageing in Air Oven	BS 7870-2:2022	-----
		High Voltage test (Water immersion)	BS 7870-1:2011	
		High Voltage test at room temperature		
		Insulation Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
132	Measurement of carbon black and/or mineral filler in polyethylene compounds	Carbon Content Test	IEC/BS EN 60811-605:2012	-----
133	Measurement of smoke density of cables burning under defined conditions	Smoke Density under Fire Conditions	IEC/BS 61034-2:2005	-----
134	Melt Flow Rates of Thermoplastics by Extrusion Plastometer	Melt Flow Index	ASTM D1238-23	-----

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135	Multi Element Metallic Cables Used in Analogue And Digital Communication and Control	Ageing in Air Oven	BS EN 50288-7:2005	-----
		Capacitance Tests		
		Conductor Elongation at Break		
		Conductor Resistance		
		Dimension for Armouring Material		
		Environmental Stress Cracking Test		
		Heat Shock Test		
		Hot deformation test / Pressure Test at High Temperature		
		Inductance Test		
		Insulation Resistance		
		L/R Ratio Test		
		Loss of Mass		
		Mass of Zinc Coating		
		Melt Flow Index		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Shrinkage Test		

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		Tensile strength & Elongation at break for armouring material		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
136	Optical fibre cable	Abrasion test	IEC 60794-1-2:2021 IS 13882 (Part 1 / Section 1):2001(RA:2016)	
		Bend test		
		Flexing test		
		Impact test		
		Torsion test		
		Water penetration test		
		Tensile strength		

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		Test under fire condition	IS 13882 (Part 1 / Section 1):2001(RA:2016)	
		Physical Dimension		
			IEC 60794-1-1:2015	
		Physical Dimension	IEC 60811-203:2012	-----
137	Paper Covered Aluminium Conductors	Conductor diameter	IS 6162 (P-1):1971(RA:2018)	-----
		Diameter		
		Increase in diameter		
		Oil absorption		
		Overall diameter of wire		
		Resistance		
		Tensile strength and elongation		
		Thickness of paper		
		Wrapping test		
		Increase in dimension due to covering	IS 6162 (P-2):1971(RA:2018)	
		Oil absorption		

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		Over all dimension		
		Resistance		-----
		Tensile strength		
		Thickness of paper		
138	Persulphate Test of Conductor	Persulphate Test/ Tinning Test	IS 10810 (Part 4):1984(RA:2021)	-----
139	Petroleum and natural gas industries External coatings for buried or submerged pipelines used in pipeline transportation systems (Polyolefin coatings (3- layer PE and 3-layer PP))	UV Test	ISO 21809-1:2018	-----
140	Plastics and Insulation sheath compound of cable	Density and Specific Gravity (Relative Density) of Plastics by displacement	ASTM D792-20	
		Smoke Density Rating	ASTM D2843-22	
		Tensile Strength at yield	ASTM D638-22	
		Oxygen Index Test	ASTM D2863:19	
			IS 10810 (Part 58):1998(RA:2019)	

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		Tensile strength & elongation	ASTM D638-22	
		UV Test	ISO 4892-2:2017	
			ISO 4892-3:2017	
141	Plastics -- Determination of burning behaviour by oxygen index -- Part 2: Ambient-temperature test	Oxygen Index Test	ISO 4589-2:2017	-----
142	Plastics -- Determination of burning behaviour by oxygen index -- Part 3: Elevated-temperature test	Temperature Index Test	ISO 4589-3:2017	-----
143	Plastics and other cable compound	Density and Specific Gravity (Relative Density) of Plastics by displacement	IEC/BS EN 60811-606:2012	-----
144	Polyethelen insulation and sheath	Carbon Content Test	IS 10810 (Part 32):1984(RA:2021)	-----
145	Polyethylene & its derivatives	Oxygen Induction time	ASTM D3895-19	-----
146	Polyethylene compounds	Melt Flow Index	IEC/BS EN 60811-511:2012	-----
147		Annealing Test for Copper Wire	IS 10810 (Part-1):1984(RA:2021)	-----

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	Polyethylene insulation and sheath	Melt Flow Index	IS 10810 (Part 23):1984(RA:2021)	
		Environmental Stress Cracking Test	IS 10810 (Part 29):1984(RA:2021)	
148	Polyethylene Moulding Materials and Polyethylene Compounds	Bleeding and Blooming Test	IS 2530:1963(RA:2018)	-----
		Carbon Content Test		
		Colour Fastness to Day Light		
		Colour Fastness to Water		
		Melt Flow Index		
		Vicat Softening Point		
149	Polymeric insulated aerial bundled conductors (ABC) of rated voltage 0.6/1 kV for overhead distribution	Ageing in Air Oven	BS 7870-5:2011	-----
		Breaking load on Messenger Conductor		
		Conductor Resistance		
		High Voltage test at room temperature		
		Insulation Resistance		
		Shrinkage Test		
		Spark Test		

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		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Water Absorption Test (Gravimetric)		
150	Polyolefin pipes, fittings and compounds	Carbon black dispersion test	ISO 18553:2002	-----
151	Polyvinyl Chloride Insulated Cables	Ageing in Air Oven	IEC 60227-1:2007 IEC 60227-2:1997	
		Bending Test at low Temperature		
		Conductor Resistance		
		Durability & Legibility of Marking		
		Elongation Test at Low Temperature		
		Heat Shock Test		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		

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		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
		Loss of Mass		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
		Bending Test	IEC 60227-2:199	
152	Polyvinyl Chloride Insulated cables -	Conductor Resistance	IEC 60227-6:2001	-----

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	Part 6 Lift Cables and Cables for Flexible Connections			
153	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	Flexing test	IEC 60227-2:1997	-----
154	Polyvinyl Chloride Insulated Cables: Flexible Cables (Cords)	Bending Test at low Temperature	IEC 60227-5:2011	-----
		Elongation Test at Low Temperature		
		Heat Shock Test		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Loss of Mass		
		Thermal Stability		
		Ageing in Air Oven		
		Conductor Resistance		

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		Durability & Legibility of Marking		
		Insulation Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
155	Polyvinyl Chloride Insulated Cables: Lift Cables and Cables for Flexible Connections	Ageing in Air Oven	IEC 60227-6:2001	
		Bending Test at low Temperature		
		Durability & Legibility of Marking		
		Elongation Test at Low Temperature		
		Heat Shock Test		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		

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		Hot deformation test / Pressure Test at High Temperature		-----
		Insulation Resistance		
		Loss of Mass		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
156	Polyvinyl Chloride Insulated Cables: Non-Sheathed Cables for Fixed Wiring	Conductor Resistance	IEC 60227-3:1993	
		Ageing in Air Oven		
		Bending Test at low Temperature		
		Durability & Legibility of Marking		
		Elongation Test at Low Temperature		
		Heat Shock Test		

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		High Voltage test (Water immersion)		-----
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
		Loss of Mass		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
157	Polyvinyl Chloride Insulated Cables: Sheathed Cables for fixed wiring	Ageing in Air Oven	IEC 60227-4:1992	
		Bending Test at low Temperature		
		Conductor Resistance		
		Durability & Legibility of Marking		

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		Elongation Test at Low Temperature		-----
		Heat Shock Test		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
		Loss of Mass		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
158	Polyvinyl Chloride Insulated unsheathed and	Additional Ageing Test	IS 694:2010(RA:2020)	
		Ageing in Air Oven		

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sheathed cables/cords with rigid and flexible conductor for rated voltages upto and including 1100V	Annealing Test for Copper Wire	-----
	Cold Bend Test	
	Cold Impact test	
	Conductor Resistance	
	Durability & Legibility of Marking	
	Flexing Test	
	Halogen Acid Gas Evolution / Corrosive & halogen acid gas	
	Heat Shock Test	
	High Voltage test (Water immersion)	
	High Voltage test at room temperature	
	Hot deformation test / Pressure Test at High Temperature	
	Insulation Resistance	
	Loss of Mass	
	Oxygen Index Test	
	Persulphate Test/ Tinning Test	

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		Shrinkage Test		
		Temperature Index Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Tensile Strength for Aluminium Wires		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
		Wrapping Test for Aluminium Wires		
159	Power cables for rated voltage 1kV and 3kV	Measurement of Conductor resistance	IEC 60092-353:2016	
		Increase in AC capacitance after immersion in water		
		Acid gas emission		
		Additional ageing compatibility test		

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118-119, First Floor, Sushant Tower, Sector – 56, Gurugram – 122011, Haryana, India.



## SCOPE OF ACCREDITATION

(Annexure to Certificate of TL – 101)

Laboratory Name      M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Behavior at high temperature (Hot pressure test)		-----
		Behavior at low temperatures on sheaths		
		Conductivity test		
		Conductor examination		
		Coverage density of braid		
		Durability of marking		
		Enhanced hot oil immersion		
		External diameter		
		Fire retardant test (Circuit integrity)		
		Fluorine content test		
		High voltage test for 4 hour		
		Hot oil immersion test		
		Hot set test		
		Insulation resistance measurement at maximum rated temperature		
		Insulation resistance test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Loss of mass test		
		Mechanical properties of insulation before and after ageing		
		Ozone resistance test		
		pH test		
		Resistance to cracking heat shock		
		Smoke emission test		
		Test for coating of copper wires		
		test for fire resistance (limited circuit integrity)		
		Thickness of insulation		
		Thickness of non metallic sheath		
		Voltage test		
		Voltage test on sheath		
160	Power Cables for the distribution of electrical energy	Accelerated Water Absorption Test (Electrical)	NEMA WC 5 : 1973	-----
		Dielectric Strength Retention Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

161	Power Cables rated 2000V or less for the distribution of Electrical Energy	Accelerated Water Absorption Test (Electrical)	NEMA WC70:2001	-----
162	Power cables with extruded insulation and their accessories for rated voltages above 30 kV (Um = 36 kV) up to 150 kV (Um= 170 kV)	Impulse Withstand Test	IEC 60840:2020	-----
		Abrasion Test		
		Adhesion Strength of metal foil		
		Ageing in Air Bomb		
		Ageing in Air Oven		
		Bending Test		
		Carbon Black Content		
		Cold Elongation Test		
		Cold Impact Test		
		Compatibility Test		
		Conductor Resistance		
		Density of HDPE Insulation		
		Determination of Elastic Modulus		
		Determination of Hardness		
		Heat Cycle Test		

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118-119, First Floor, Sushant Tower, Sector – 56, Gurugram – 122011, Haryana, India.



## SCOPE OF ACCREDITATION

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Heat Shock Test		
		High Voltage Test for 15 minutes		
		Hot Set Test		
		Loss of Mass Test		
		Measurement of Capacitance		
		Ozone Resistance Test		
		Partial Discharge Test		
		Peel Strength of overlapped metal foil		
		Pressure Test at high Temperature		
		Shrinkage Test		
		Tan delta Measurement		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test on extruded semi conducting screens- Volume Resistivity		

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## SCOPE OF ACCREDITATION

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Test under Fire Conditions		
		Thermal ageing test for complete cable		
		Thickness of Metal Sheath		
		Water Penetration Test		
163	Power Cables with extruded insulation and their accessories for rated voltages from 1kV to 3 kV	Accelerated Water Absorption Test (Electrical)	IEC 60502-1:2021	
		Ageing in Air Oven		
		Carbon Content Test		
		Cold Bend Test		
		Cold Impact Test		
		Conductor Resistance		
		Elongation Test at Low Temperature		
		Flame Retardance Test on Bunched cable		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		Heat Shock Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		High Voltage Test (4 Hour Test)		-----
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Impulse Withstand Test		
		Insulation Resistance		
		Loss of Mass		
		Ozone Resistance Test		
		Shrinkage Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Thermal ageing test for complete cable/ Additional		

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## SCOPE OF ACCREDITATION

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Ageing Test on pieces of Completed Cables		
		Thermal Stability		
		Water Absorption Test (Gravimetric)		
164	Power Cables with extruded insulation and their accessories for rated voltages from 6 kV to 30 kV	Conductor Resistance	IEC 60502-2:2014	
		Accelerated Water Absorption Test (Electrical)		
		Ageing in Air Oven		
		Carbon Content Test		
		Cold Bend Test		
		Cold Impact Test		
		Elongation Test at Low Temperature		
		Heat Shock Test		
		High Voltage Test (4 Hour Test)		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Impulse Withstand Test		
		Insulation Resistance		
		Loss of Mass		
		Ozone Resistance Test		
		Shrinkage Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		-----
		Thermal ageing test for complete cable/ Additional Ageing Test on pieces of Completed Cables		
		Thermal Stability		
		Water Absorption Test (Gravimetric)		
		Bending Test		
		Dielectric Power Factor Test as a function of temperature		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Heat Cycle Test		
		Partial Discharge Test		
165	Power, control and instrumentation cables	Acid gas emission test	IEC 60092-350:2020	-----
		Additional aging test on pieces of completed cable (Compatibility test)		
		Ageing test of insulation and sheath		
		Cold bend test		
		Cold impact test		
		Conductivity test		
		Conductor resistance		
		Coverage density of braid		
		Durability of print		
		Enhanced hot oil immersion test		
		Fire resistance test (test for circuit integrity cables)		
		Flame spread test on bunched cables		
		Flame spread test on single cables		
		Fluorine content test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Heat shock test		
		High voltage test for 4 hours		
		Hot oil immersion test		
		Hot pressure test		
		Increase in a.c. capacitance after immersion in water		
		Inductance to resistance ratio		
		Insulation resistance test		
		Loss of mass test		
		Measurement of standard diameter		
		Mud drilling fluid test		
		Mutual capacitance		
		Ozone resistance test		
		pH test		
		Smoke emission test		
		Test for behavior of insulation and sheath at low temperatures		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Test for determining the mechanical properties of insulation and sheath		
		Test for metal coating of copper wires		
		Thickness of insulation and sheath		
166	Procedure and requirements – Optical Fibre Cables	Test for electric cables under fire conditions- Circuit Integrity	IEC 60331-25:1999	-----
167	PVC Insulated (Heavy Duty) Electric cables for working voltages from 3.3 kV to 11 kV	Bending Test	IS 1554 (Part 2):1988(RA:2020)	
		Dielectric Power Factor Test as a function of temperature		
		Dielectric Power Factor Test as a function of voltage		
		Heat Cycle Test		
		High Voltage Test ( 4 Hour Test)		
		Impulse Withstand Test		
		Partial Discharge Test		
		Water Absorption Test (Gravimetric)		

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Laboratory Name      M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Annealing Test for Copper Wire		
		Tensile Strength for Aluminium Wires		
		Tensile strength and elongation at break on Insulation and Sheath		
		Insulation Resistance		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Flame Retardance Test on Bunched cable		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		Oxygen Index Test		
		Dimension for Armouring Material		
		Ageing in Air Oven		
		Armour Coverage Percentage Test		
		Cold impact Test		
		Conductor Resistance		

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Laboratory Name      M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Flame Retardant Test on Single cable (Swedish Chimney)		
		Heat Shock Test		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Loss of Mass		
		Mass of Zinc Coating		
		Resistance Test for Armour (for Mining Cables)		
		Shrinkage Test		
		Temperature Index Test		
		Tensile strength & Elongation at break for armouring material		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
		Torsion Test on Galvanized steel wire for Armouring		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
		Wrapping Test for Aluminium Wires		
		Uniformity of Zinc coating (Dip Test)		
168	PVC Insulated (Heavy Duty) Electric cables for working voltages up to 1100	Cold Bend Test	IS 1554 (Part 1):1988(RA:2020)	-----
		Cold Impact Test		
		Dimension for Armouring Material		
		Flame Retardance Test on Bunched cable		
		Flame Retardant Test on Single cable (Swedish Chimney)		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		

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118-119, First Floor, Sushant Tower, Sector – 56, Gurugram – 122011, Haryana, India.



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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Oxygen Index Test		
		Resistance Test for Armour (for Mining Cables)		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Temperature Index Test		
		Tensile strength & Elongation at break for armouring material		
		Test under Fire Conditions / Flammability Test		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Armour Coverage Percentage Test		-----
		Mass of Zinc Coating		
		Ageing in Air Oven		
		Annealing Test for Copper Wire		
		Conductor Resistance		
		Heat Shock Test		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
		Loss of Mass		
		Shrinkage Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Tensile Strength for Aluminium Wires		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Thermal Stability		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Wrapping Test for Aluminium Wires		
169	PVC Insulated and PVC Sheathed cables for electric power and lighting	Ageing in Air Oven	BS 6004:2012	-----
		Conductor Resistance		
		Heat Shock Test		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
		Loss of Mass		
		Thermal Stability		
170	PVC insulated cables	Ageing in air oven	IRS : S 63 : 2014	-----
		Annealing test		
		Conductor Diameter		
		Conductor resistance test		
		Elongation for armour		
		Elongation of sheath and insulation		
		Flammability test		
		High voltage test		
		Insulation resistance test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Loss of mass test		-----
		Mass of zinc coating		
		Resistivity test		
		Shrinkage test		
		Specific gravity test		
		Tensile strength for armour		
		Tensile strength of insulation and sheath		
		Thermal stability test		
		Thickness of insulation		
		Thickness of insulation and sheath		
		Torsion test		
		Uniformity of zinc coating		
		Water immersion test		
		Winding test and Wrapping		
171	PVC Insulated combined neutral and earth copper wire concentric cables with copper	Ageing in Air Oven	BS 7870-3.10:2001	
		Bending Test at Low Temperature		
		Compatibility Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

	or aluminium conductor	Conductor Resistance		-----
		Elongation Test at Low Temperature		
		Heat Shock Test		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
		Loss of Mass		
		Measurement of Overall Dimensions		
		Measurement of Thickness of Insulation & Sheath		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test under Fire Conditions / Flammability Test		
		Voltage Test on Complete Cable		
172	PVC insulated compounds	Volume resistivity	BS EN 50290-2-21:2002	
		Heat Shock Test	BS EN 50363-3:2005	
		Thermal Stability		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Ageing in Air Oven		
		Bending Test at Low Temperature		
		Elongation Test at Low Temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		-----
		Loss of Mass		
		Tensile strength and elongation at break on Insulation and Sheath		
173	PVC Insulation and Sheath of Electrical Cables	Bleeding & Blooming Test	IS 5831:1984(RA:2021)	-----
174	PVC Sheathing Compound	Tensile strength and elongation at break on Insulation and Sheath	BS EN 50363-4-1:2005	
		Ageing in Air Oven		
		Bending Test at Low Temperature		-----
		Elongation Test at Low Temperature		
		Heat Shock Test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Hot deformation test / Pressure Test at High Temperature		
		Loss of Mass		
		Thermal Stability		
175	Railway rolling stock cables	Abrasion resistance	BS EN 50305:2020	
		Acid and alkali resistance		
		Blocking of cores		
		D.C. stability		
		Dielectric strength		
		Durability of marking		
		Electrical resistance of conductors		
		Flame propagation		
		Impact test at low temperature		
		Insulation resistance		
		Long term ageing for insulation		
		Long term ageing for sheath		
		Mineral and fuel oil resistance		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Notch propagation		-----
		Ozone resistance test		
		Pilability		
		Pressure test at high temperature		
		Shrinkage test for insulation		
		Spark test		
		Stress cracking test		
		Stripability and adhesion of insulation		
		Surface resistance test		
		Toxicity		
		Voltage test on complete cable		
		Voltage test on sheath		
		Water absorption of sheath		
176	Railway rolling stock power and control cables having special fire performance	Measurement of Overall Dimensions	BS EN 50264-3-1:2008	
		Acid and alkali resistance test		
		Ageing test		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Bending test at low temperature		
		Cold elongation		
		Compatibility test		
		Conductor resistance		
		D.C. stability		
		Dielectric strength		
		Fuel resistance test		
		Hot set test		
		Impact test at low temperature		
		Insulation resistance		
		Mineral oil resistance		
		Ozone resistance test		
		Spark test		
		Surface resistance		
		Voltage test		
		Water absorption test		
177	Reference Standard for Electrical Wires,	UV Test	UL 1581:2001	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

	Cables, and Flexible Cords			
178	Resistance to stress cracking of polyethylene and polypropylene compounds	Environmental Stress Cracking Test	IEC/BS EN 60811-406:2012	-----
179	Road vehicles- 60V and 600V single core cable	Abrasion test	ISO 6722-1:2011	-----
		Cold impact		
		Conductor diameter		
		Conductor resistance		
		Durability of cable marking		
		Fluid compatibility		
		Insulation faults		
		Insulation thickness		
		Insulation volume resistivity		
		Long term heat aging		
		Low temperature winding		
		Outside cable diameter		
		Pressure test at high temperature		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Resistance to flame propagation		
		Resistance to hot water		
		Resistance to ozone		
		Short term heat aging		
		Shrinkage by heat		
		Strip force		
		Temperature and humidity cycling		-----
		Thermal overload		
		Withstand voltage		
180	Rubber compound for cables	Hydrolytic Stability Test	ASTM D3137-81(2018)	-----
181	Rubber Deterioration in an Ozone Controlled Environment	Ozone resistance	ASTM D 1149-18	-----
182	Rubber insulated cables	Ageing in Air Oven	IEC 60245-1:2003	
		Conductor Resistance	IEC 60245-2:1994	
		Flexing Test		
		Hot Set Test		
		Measurement of Overall Dimensions		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Measurement of Thickness of Insulation & Sheath	IEC 60245-2:1994	-----
		Tensile strength and elongation at break on Insulation and Sheath		
		Voltage test on complete cables		
		Voltage Test on cores		
		Distance between centres of conductors		
		High Voltage Test		
		Ovality		
		Overall Dimensions		
183	Rubber insulated cables – Rated voltages up to and including 450/750 V	Ageing test	IEC 60245-2:1994	
		Electrical resistance of conductors		
		Flame retardant test		

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118-119, First Floor, Sushant Tower, Sector – 56, Gurugram – 122011, Haryana, India.



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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Flexing test		-----
		Insulation resistance at temperatures above 90 °C		
		Kink Test		
		Measurement of overall dimension		
		Measurement of thickness of insulation and sheath		
		Oxygen bomb test		
		Static Flexibility test		
		Voltage test carried out on complete cables		
		Voltage test on cores		
		Wear Resistance		
		Ageing test	IEC 60245-4:2011	-----
		Bending test at low temperature		
		Flexing test		
		Hot set test		
		Measurement of thickness of insulation and sheath		
		Ovality		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Overall diameter		
		Ozone resistance test		
		Resistance of conductor		
		Tensile strength and elongation		
		Voltages test on complete cable		
		Voltages test on cores		
184	Rubber insulated cables: Cords and Flexible Cables	Ageing in Air Oven	IEC 60245-4:2011	
		Conductor Resistance		
		Distance between centres of conductors		
		Flexing Test		
		Hot Set Test		
		Measurement of Overall Dimensions		
		Measurement of Thickness of Insulation & Sheath		
		Ozone Resistance Test		
		Tensile strength and elongation at break on Insulation and Sheath		-----

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IMT Manesar, Gurugram (Haryana)-122050

		Voltage Test		
		Voltage Test on Cores according to Specified Insulation Thickness		
185	Rubber insulated cables: Heat resistant silicone insulated cables	Ageing in Air Oven	IEC 60245-3:1994	-----
		Conductor Resistance		
		Hot Set Test		
		Measurement of Overall Dimensions		
		Measurement of Thickness of Insulation & Sheath		
		Tensile strength and elongation at break on Insulation and Sheath		
		Voltage Test		
186	Rubber insulated cables: Lift Cables	Tensile strength and elongation at break on Insulation and Sheath	IEC 60245-5:1994	-----
		Ageing in Air Oven		
		Conductor Resistance		
		Hot Set Test		
		Measurement of Overall Dimensions		

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IMT Manesar, Gurugram (Haryana)-122050

		Measurement of Thickness of Insulation & Sheath		
187	Rubber or Silicon Rubber insulated flexible cables & cords for coils & leads	Ageing in Air Oven	BS 6195:2006	-----
		Conductor Resistance		
		Heat Shock Test		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
188	Rubber Property- Durometer Hardness	Shore A Hardness	ASTM D2240-15(2021)	-----
		Shore D Hardness		

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189	Rubber, vulcanized or thermoplastic	Elongation at break	ISO 37:2017	-----
		Tensile at 100% extension		
190	Single core cables with crosslinked silicone rubber insulation	Ageing in Air Oven	BS EN 50525-2-41:2011	-----
		Conductor Resistance		
		Insulation Resistance		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
191	Single core non-sheathed cables with crosslinked EVA insulation	Ageing in Air Oven	BS EN 50525-2-42:2011	-----
		Insulation Resistance		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
192	Single Core non-sheathed cables with thermoplastic PVC Insulation	Ageing in Air Oven	BS EN 50525-2-31:2011	
		Bending Test at Low Temperature		
		Conductor Resistance		
		Elongation Test at Low Temperature		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Heat Shock Test		-----
		High Voltage test at 2000 V or 2500 V		
		Long Term Resistance of Insulation to d.c.		
		Loss of Mass		
		Measurement of Overall Dimensions		
		Measurement of Thickness of Insulation & Sheath		
		Pressure Test at High Temperature		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test under Fire Conditions / Flammability Test		
		Thermal Stability		
193	Single core PVC insulated flexible cable for switchgear and control gear wiring	Ageing in Air Oven	BS 6231:2006	
		Conductor Resistance		
		Heat Shock Test		
		High Voltage test (Water immersion)		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		High Voltage test at room temperature		-----
		Insulation Resistance		
		Loss of Mass		
		Pressure Test at High Temperature		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
194	single insulated wire or cable	Test under Fire Conditions / Flammability Test	IEC 60332-1-1:2004	-----
195	Single wire armoured and PVC sheathed multicore cable with copper conductors	Ageing in Air Oven	BS 7870-8.1:2003	
		Conductor Resistance		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Hot deformation test / Pressure Test at High Temperature		-----
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
196	Single wire armoured and PVC sheathed multicore cable with copper conductors, having reduced fire propagation performance	Ageing in Air Oven	BS 7870-8.3:2003	
		Conductor Resistance		
		High Voltage test (Water immersion)		
		High Voltage test at room temperature		
		Insulation Resistance		-----
		Shrinkage Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Water Absorption Test (Gravimetric)		

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197	Single Wire Armoured and PVC Sheathed Multipair Cable with Copper Conductors	Ageing in Air Oven	BS 7870-8.2:2003	-----
		Bending Test at Low Temperature		
		Carbon Content Test		
		Conductor Resistance		
		Density and Specific Gravity (Relative Density) of Plastics by displacement		
		Dimension for Armouring Material		
		Elongation Test at Low Temperature		
		Environmental Stress Crack Resistance		
		Heat Shock Test		
		Hot deformation test / Pressure Test at High Temperature		
		Inductance Test		
		Insulation Resistance		
		Loss of Mass		
		Mass of Zinc Coating		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Measurement of Thickness of Insulation & Sheath		
		Melt Flow Index		
		Tensile strength & Elongation at break for armouring material		
		Tensile strength and elongation at break on Insulation and Sheath		
		Tensile Strength at yield		
		Water Penetration Test		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
198	Single wire armoured and unarmoured multicore cables with copper conductor and non-halogenated sheath	Abrasion Test	BS 7870-8.5:2003	
		Ageing in Air Bomb		
		Ageing in Air Oven		
		Compatibility Test		
		Conductivity		
		Conductor Resistance		
		Dimension for Armouring Material		

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		Elongation Test at Low Temperature		-----
		Flame Propagation (Retardance) Test on Multiple (Bunched) cables		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		High Voltage test (Water immersion)		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Impact Test at Low Temperature		
		Insulation Resistance		
		Mass of Zinc Coating		
		Measurement of Thickness of Insulation & Sheath		
		Mineral Oil Resistance		
		Oxygen Index Test		
		Ozone Resistance Test		
		pH		

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IMT Manesar, Gurugram (Haryana)-122050

		Shrinkage Test		
		Smoke Density under Fire Conditions		
		Tear Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test under Fire Conditions / Flammability Test		
		Water Absorption Test		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
199	Single wire or double steel tape armoured and non-halogenated sheathed multipair cable with copper conductors	Ageing in Air Oven	BS 7870-8.6:2003	-----
		Conductor Resistance		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		and sheath / Overall Dimensions		
200	Single Wire or double steel tape armoured and PVC Sheathed multipair cable with copper conductors, having reduced fire propagation performance	Ageing in Air Oven	BS 7870-8.4:2003	-----
		Bending Test at Low Temperature		
		Cold bend Test / Voltage Test after bending		
		Conductor Resistance		
		Dimension for Armouring Material		
		Elongation Test at Low Temperature		
		Flame Propagation (Retardance) Test on Multiple (Bunched) cables		
		Heat Shock Test		
		Hot deformation test / Pressure Test at High Temperature		
		Inductance Test		
		Insulation Resistance		
		Loss of Mass		
		Mass of Zinc Coating		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Measurement of Thickness of Insulation & Sheath		
		Oxygen Index Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test under Fire Conditions / Flammability Test		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
201	Soft or annealed copper wire	Density	ASTM B3(2018)	
		Dimension		
		Elongation		
		Surface finish		-----
202	Solid Electrical Insulating Materials	Dielectric strength	ASTM D149-20	
203	Specification for insulating and sheathing materials for cables. PVC sheathing compounds	Heat Shock Tests	BS 7655-4.2:2000	-----

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204	Specification for PVC Insulation and Sheath of Electric Cables	Colour Fastness to Day Light	IS 5831:1984(RA:2021)	-----
		Colour Fastness to Water		
205	Standard for Control, Thermo Couple Extension and Instrumentation Cables	Dielectric Strength Retention Test	NEMA WC57:2004	Capacitance & tendelta bridge
		Accelerated Water Absorption Test (Electrical)		-----
206	Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials <sup>1</sup>	UV test	ASTM G155-21	Xenon arc lamp UV test apparatus
207	Steel wire and wire products- Non ferrous metallic coatings on steel wire. Zinc or Zinc alloy coating	Adherence test	BS EN 10244-1:2009	-----
		Dipping test	BS EN 10244-2:2009	
			ISO 7989-2:2021	
		Mass of coating	BS EN 10244-1:2009	
			ISO 7989-2:2021	
		Mass of zinc coating	BS EN 10244-2:2009	
208	Tensile Properties of Plastics	Tensile strength and elongation at break on Insulation and Sheath	ASTM D638-22	-----

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209	Thermoplastic insulation and sheath	Bleeding and Blooming Test	IS 10810 (Part 19):1984(RA:2021)	-----
210	Thermal endurance properties. Ageing procedures and evaluation of test results	Thermal Endurance Test	IEC 60216-1:2013	-----
211	Thermo-couple Compensating cables	Conductor Resistance	IS 8784:1987(RA:2018)	-----
		Heat Shock Test		
		Drain Wire Continuity Test		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Insulation Resistance		
212	Thermocouple compensating cables	Thermal emf Test	ANSI MC-96.1: 1975	-----
			IS 8784:1987(RA:2018)	

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213	Thermoplastic elastomeric insulation and sheath of electric cable	Hot deformation test / Pressure Test at High Temperature	IS 10810 (Part 15):1984(RA:2021)	-----
		Loss of Mass	IS 10810 (Part 10):1984(RA:2021)	
		Cold Impact Test	IS 10810 (Part 21):1984(RA:2021)	
		Cold Bend Test	IS 10810 (Part 20):1984(RA:2021)	
		Heat Shock Test	IS 10810 (Part 14):1984(RA:2021)	
		Colour Fastness to Day Light	IS 10810 (Part 18):1984(2001)	
		Vicat softening Point	IS 10810 (Part 22):1984(RA:2021)	
214	Thermosetting insulated and Thermoplastic Sheathed cables for electric power, lighting and having low emission of smoke and corrosive gases when effected by fire	Ageing in Air Oven	BS 7211:2012	-----
		Cold Bend Test		
		Cold Impact Test		
		Compatibility Test		
		Conductor Resistance		
		Elongation Test at Low Temperature		
		Flame Retardance Test on Bunched cable		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
IMT Manesar, Gurugram (Haryana)-122050

		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Insulation Resistance		
		Shrinkage Test		
		Smoke Density under Fire Conditions		
		Tear Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Water Absorption Test (Gravimetric)		

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215	Thermosetting Insulated Fire Survival cables for fixed Installation having low Emission of smoke and Corrosive Gases when affected by Fire for Working Voltages upto and including 1100 V A.C and 1500 V D.C	Abrasion resistance test	IS 17505(Part-1):2021	
		Ageing in air oven of Insulation and Sheath		
		Annealing Test (For Copper)		
		Assessment of halogen on insulation and sheath - Chlorine and bromine content expressed as content of HCL		
		Assessment of halogen on insulation and sheath - Conductivity test		
		Assessment of halogen on insulation and sheath - Fluorine content		
		Assessment of halogen on insulation and sheath - Presence of fluorine		
		Assessment of halogen on insulation and sheath- pH test		
		Cold Bend Test		
		Cold Impact Test		
		Conductor Resistance Test		

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		Dimension of armouring material		-----
		Elongation at break for armouring metrial		
		Elongation of Insulation and Sheath		
		Flame test on bunched cable		
		Flame test on single cable		
		Heat Shock		
		High voltage test		
		Hot Deformation Test		
		Hot Set Test		
		Insulation resistance test		
		Mass of zinc coating		
		Oxygen Index Test		
		Ozone resistance test		
		Persulphate Test for Tinned Conductor		
		Resistance to Fire , Water and shock (Category F30, Category F60, Category F120)		

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		Resistance to fire alone (Category F3) (Symbol F)		
		Resistance to fire and mechanical shock (Category F3), (Symbol S)		
		Resistance to fire and water (Category F3) (Symbol W)		
		Resistivity test of armour (wire/strips)		
		Shrinkage Test		
		Smoke density		
		Temperature index test		
		Tensile strength of armouring material		
		Tensile Strength of Insulation and Sheath		
		Test for Thickness of Insulation and Sheath		
		Torsion test on galvanized steel wire for armouring		
		Uniformity of zinc coating (dip test)		
		Water Absorption (Gravimetric)		

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		Water immersion test (effect of water on sheath of cable) on finished cable Elongation at break		
		Water immersion test (effect of water on sheath of cable) on finished cable Tensile Strength		
		Winding / Wrapping test on galvanized steel grip for armouring		
216	Thermosetting insulated, armoured cables for voltages of 600/1000V and 1900/3300V	Abrasion Test	BS 5467:2016	
		Ageing in Air Oven		
		Conductor Resistance		
		Dimension for Armouring Material		
		Insulation Resistance		
		Loss of Mass		
		Mass of Zinc Coating		
		Resistivity & Conductance test of Armour (Wires/strips)		
		Shrinkage Test		
		Tensile strength & Elongation at break for armouring material		

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		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Torsion Test on Galvanized steel wire for Armouring		
		Uniformity of Zinc coating (Dip Test)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
217	Thermosetting insulated, armoured cables having low emission of smoke and corrosive gases when affected by fire	Abrasion Test	BS 6724:2016	-----
		Ageing in Air Oven		
		Cold Bend Test		
		Cold Impact Test		
		Compatibility Test		
		Conductor Resistance		
		Dimension for Armouring Material		
		Elongation Test at Low Temperature		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Flame Retardance Test on Bunched cable		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Insulation Resistance		
		Mass of Zinc Coating		
		Shrinkage Test		
		Smoke Density under Fire Conditions		
		Tear Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		

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		Test under Fire Conditions / Flammability Test		
		Water Absorption Test (Gravimetric)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
218	Thermosetting insulated, armoured Fire-Resistant cables having low emission of smoke and corrosive gases when affected by fire	Abrasion Test	BS 7846:2015	
		Ageing in Air Oven		
		Cold Bend Test		
		Cold Impact Test		
		Compatibility Test		
		Conductor Resistance		
		Dimension for Armouring Material		
		Elongation Test at Low Temperature		
		Flame Retardance Test on Bunched cable		
		Halogen Acid Gas Evolution / Corrosive & halogen acid gas		
		High Voltage test at room temperature		

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		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Insulation Resistance		
		Mass of Zinc Coating		
		Resistance to Fire (Category F30, Category F60, Category F120)		
		Resistance to fire alone (Protocol C)		
		Resistance to fire to with water (Protocol W)		
		Resistance to fire with mechanical shock (Protocol Z)		
		Shrinkage Test		
		Tear Resistance		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		

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		Test under Fire Conditions / Flammability Test		
		Water Absorption Test (Gravimetric)		
		Winding/ Wrapping Test on Galvanized steel strip for Armouring		
219	Thermosetting Insulated, non- armoured cables for fixed installations	Ageing in Air Oven	BS 7889:2012	-----
		Bending Test at low Temperature		
		Cold Impact Test		
		Conductivity Test		
		Conductor Resistance		
		Elongation Test at Low Temperature		
		Heat Shock Test		
		High Voltage test at room temperature		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Loss of Mass		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Ozone Resistance Test		
		pH Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Test under Fire Conditions / Flammability Test		
		Water Absorption Test (Gravimetric)		
220	UV Exposure of non-metallic materials	UV Test	ASTM G151-19	
			ASTM G154-23	-----
221	Water Absorption of Plastics	Water Absorption Test	ASTM D570-22	-----
222	Welding Cables	Ageing in Air Bomb	IS 9857:1990(RA:2020)	
		Ageing in Air Oven		-----
		Annealing Test for Copper Wire		
		Conductor Resistance		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		High Voltage test (Water immersion)		
		Hot Set Test		
		Oil Resistance Test		
		Static Flexibility Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
223	Winding Wires for Submersible Motors: Cross linked Polyethylene Insulated and Polyamide Jacket Wires	Annealing Test for Copper Wire	IS 8783 (Part 4 Sec 2):1995(RA:2021)	
		Accelerated Water Absorption Test (Electrical)		
		Ageing in Air Oven		
		Conductor Diameter		
		Conductor Resistance		
		Heat Shock Test		
		High Voltage test (Water immersion)		

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		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Insulation Resistance		
		Overall Dimensions		
		Shrinkage Test		
		Spark Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
224	Winding Wires for submersible motors: HR PVC Insulated Wires	Water Absorption Test (Gravimetric)	IS 8783 (Part 4, Sec 1):1995(RA:2021)	
		Accelerated Water Absorption Test (Electrical)		
		Ageing in Air Oven		
		Annealing Test for Copper Wire		
		Conductor Diameter		
		Conductor Resistance		

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Heat Shock Test		
		High Voltage test (Water immersion)		
		Hot deformation test / Pressure Test at High Temperature		
		Hot Set Test		
		Insulation Resistance		
		Overall Dimensions		
		Shrinkage Test		
		Spark Test		
		Tensile strength and elongation at break on Insulation and Sheath		
		Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
		Water Absorption Test (Gravimetric)		
225	Winding Wires for submersible motors: Polyester and Polypropylene	Accelerated Water Absorption Test (Electrical)	IS 8783 (Part 4, Sec 3):1995(RA:2021)	capacitance and ten delta bridge
		Ageing in Air Oven		

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Insulated Winding Wires	Annealing Test for Copper Wire		-----
	Conductor Diameter		
	Conductor Resistance		
	Heat Shock Test		
	High Voltage test (Water immersion)		
	Hot deformation test / Pressure Test at High Temperature		
	Hot Set Test		
	Insulation Resistance		
	Overall Dimensions		
	Shrinkage Test		
	Spark Test		
	Tensile strength and elongation at break on Insulation and Sheath		
	Test for eccentricity and Thickness of insulation and sheath / Overall Dimensions		
	Water Absorption Test (Gravimetric)		

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226	Wires & Cables	Accelerated Water Absorption Test (Electrical)	ASTM D2633:2021	Capacitance and tendelta bridge
		Dielectric Strength Retention Test		
227	zinc or zinc alloy coated non-alloy steel wire for armouring either power or telecommunication cables land cables	Electrical resistance	BS EN 10257-1:2011	Kelvin double bridge
		Nominal diameter		-----
		Tensile strength and elongation		
		Torsion test		Torsion tester
228	Communication Cables	Attenuation	BS EN 50289-1-8: 2017	Cross talk & Attenuation meter
		Characteristic Impedance	BS EN 50289-1-11: 2016	Impedance meter
		Cross Talk	BS EN 50289-1-10: 2002	Cross talk & Attenuation meter
229	Electric Cable	Insulation Resistance Test(Post Thermal Ageing Test)	NPCIL Specification No. I28.KK34.0.0.ET.PM. 2021	Thermal ageing oven
		Absence of faults in insulation	IEC 63294: 2021	HV tester
		Bending Test	IEC 63294: 2021	

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Laboratory Name M/s RTRC Limited, Plot No. 296, Sector-7, Phase-II, Industrial Estate,  
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		Checking of the durability of clours and markings	IEC 63294: 2021	-----
		Dielectric Constant	ASTM D150: 2022	
		Dielectric Strength	ASTM D149: 2020	
		Electrical resistance of conductors	IEC 63294: 2021	
		Elogation at Break(Post Thermal Ageing Test)	NPCIL Specification No. I28.KK34.0.0.ET.PM. 2021	
		Flexing Test	IEC 63294: 2021	
		High Voltage Test(Post LOCA Test)	NPCIL Specification No. I28.KK34.0.0.ET.PM. 2021	LOCA Test apparatus & AC HV test set with Current transformer
		High Voltage Test(Post Thermal ageing Test)	NPCIL Specification No. I28.KK34.0.0.ET.PM. 2021	-----
		Insulation resistance	IEC 63294: 2021	
		Insulation resistance at temperature above 90Å° C	IEC 63294: 2021	
		Insulation Resistance Test (Post LOCA Test)	NPCIL Specification No. I28.KK34.0.0.ET.PM. 2021	Million mega ohm meter

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		LOCA Test	NPCIL Specification No. I28.KK34.0.0.ET.PM. 2021	LOCA Test apparatus & AC HV test set with Current transformer
		Long-term resistance of insulation to direct current	IEC 63294: 2021	DC HV test set
		Longitudinal water Penetration Test	IS 7098-2(RA 2021): 2011	water penetration test apparatus
		Resistivity	IEC 60468: 1974	Digital ohm meter
		Measurement of overall dimensions and ovality	IEC 63294: 2021	-----
		Measurement of thickness of insulation		
		Spark Test		
		Static flexing Test		Flexing tester
		Surface resistance of sheath		-----
		Test for Mechanical properties after air oven ageing of insulation consisting of rubber compound		tensile testing machine
		Test of resistance of sheath to water		-----

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		Voltage Test		-----
		Voltage test carried out on completed cables		
		Voltage test on cores in water		
		Thermal Ageing Test	NPCIL Specification No. I28.KK34.0.0.ET.PM. 2021	-----
230	Electric Cables, Cords and conductors	Heat shock test	AS/NZS 1660.2.3(2017): 1998	-----
		Pressure test at high temperature		
		Thermal stability test		
		Capacitance increase after immersion in water	AS/NZS1660.3(R:2017): 1998	-----
		Insulation resistance constant		
		Partial discharge test		
		Spark Test		
		Tan d Measurement as function of temperature		
		Ten d Measurement as function of voltage		

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		Voltage Test		
		Volume resistivity of semiconductive screen		
		Continuity test for nickel plating		
		Continuity test for tin or silver plating		
		Mass of coating of armour wires		
		Measurement of diameter of wire		
		Measurement of thickness of metallic sheath		
		Ageing in air oven		
		Loss of mass Test		
231	Insulating and sheathing materials with drilling fluids resistance properties	Ageing in calcium bromide brine	IEC 60092-360: 2021	-----
		Ageing in IRM 903		
		Aging in oil-based test fluid		
		Elongation at break		
		Tensile strength		
		Volume swelling		

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		Weight change		
232	Insulation, Extruded semi-conductive screens and Non-Metallic Sheaths	Measurement of thickness and diameter	AS/NZS 1660.2.1(R:2017): 1998	-----
		Bending test at low temperature for insulation and sheath		
		Elongation at low temperature for sheath		
		Gravimetric water absorption		
		Impact test at low temperature for insulation and sheath		
233	Insulation, Extruded Semi-Conductive screens and Non-Metallic Sheaths	Shrinkage Test	AS/NZS 1660.2.4(R:2017): 1998	-----
		Test for mechanical properties of Insulation and sheath	AS/NZS 1660.2.1(R:2017): 1998	
234	Metallic materials - Tensile testing	Elongation after break	ISO 6892-1: 2019	-----
		Elongation at break		
235	Metallic materials - Wire - Simple torsion test	Torsion Test	ISO 7800: 2012	Torsion tester

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236	Metallic materials - Wire - Wrapping test	Wrapping Test	ISO 7802: 2013	
237	Overhead distribution cables of rated voltage U0/U(Um): 0,6/1 (1,2) kV	Bending Test	HD 626 S1 Part-2 : 1996	Mendrells
		Conductor resistance tests		-----
		High voltage tests		
		Insulation resistance test		
		Resistance of the insulation to weather conditions		
		Test for capillary water rising		
		Testing of adherence of insulation		
		Testing of mechanical strength of conductors		
		Thermomechanical behavior of messenger		Thermomechanical stress tests apparatus
238	Polyethylene and polypropylene Materials	Carbon Black Content	AS/NZS 1660.2.4(R:2017): 1998	Carbon black test apparatus, melt flow test apparatus
		Carbon Black Dispersion		
		Melt flow Index		

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239	Power, control and communication cables	Measurement of low level of halogen content	IEC 60754-3: 2018	Chromatography test apparatus
		Tensile strength	ASTM D638: 2022	-----
		Ultimate elongation elongation at break		
		Carbon dioxide	BS EN 50575, BS EN 50399: 2022	CPR Test apparatus
		Carbon Mono Oxide (CO)		-----
		Droplets and/or Particles		
		Fire Growth Rate Index (FIGRA)		
		Oxygen		
		Peak Heat Release Rate(Peak HRR)		
		Peak smoke production rate (Peak SPR)		
		Total heat release(THR)		
		Total smoke production (TSP)		
		Vertical Flame Spread (FS)		
240	Steel wire and wire products	Uniformity of zinc and zinc aluminum coating (Or dipping test)	ISO 7989-2: 2021	Copper sulphate solution

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241	Electric Cables	Anti Rodent Test	TEC/GR/FA/DWC- 034/02: 2019	-----
242	Road Vehicles- Automotive Cables	<b>1. Dimensional tests:</b> <ul style="list-style-type: none"><li>- Cable outside diameter</li><li>- Insulation thickness</li><li>- Conductor diameter</li><li>- Cross sectional area</li><li>- In-process cable outside diameter</li></ul> <b>2. Electrical tests:</b> <ul style="list-style-type: none"><li>- Conductor resistance</li><li>- Determination of temperature coefficients</li><li>- Withstand voltage</li><li>- Withstand voltage after environmental testing</li><li>- Insulation Faults</li><li>- Insulation Volume resistivity</li></ul> <b>3. Mechanical Tests</b> <ul style="list-style-type: none"><li>- Strip force</li><li>- Abrasion</li></ul>	ISO 19642-1:2019 , ISO 19642-2:2019, ISO 19642-4:2019, ISO 19642-5:2019	-----

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		<ul style="list-style-type: none"><li>- Sandpaper abrasion test</li><li>- Scrape abrasion test</li><li>- Breaking force of the finished cable</li><li>- Cyclic bending</li><li>- Flexibility</li></ul> <p><b>4.Environmental Tests</b></p> <ul style="list-style-type: none"><li>- Specimen preparation and winding tests</li><li>- Long term heat ageing, 3000h at temperature class rating.</li></ul>		
243	Wire and Cables	UV Test	UL-2556	-----

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244	Concentric Neutral Cables, Rated 5 Through 46 KV	Dry Electrical Test	ICEA S-94-649-2021	-----
245	Insulating and Sheathing Materials for Cables	<b>1.Properties in the state as manufactured</b> -Minimum tensile strength -Minimum elongation at break <b>2.Test for tear resistance</b> <b>3. Properties after ageing in air oven</b> -Tensile Strength -Elongation at break <b>4.Properties after ageing in air bomb</b> - Tensile Strength - Elongation at Break <b>5. Hot Set Test</b> -Elongation under load -Elongation after unloading <b>6.Mineral oil immersion test</b>	BS 7655-2.6:2000 BS 6469-99.1:1992	-----

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		- Tensile strength - Elongation at break <b>7. Linear swell test</b>		
		<b>8. Halogen gas emission Test</b>	BS EN 60754-1	-----
246	Aluminum alloy wire for Stranded conductors for overhead lines-Al 59 conductors.	Tensile Strength	SS 424 08 13	-----
		Elongation		
		Wrapping Test		
		Resistivity of Wire		
		Diameter Measurement		
		Resistance of conductor and wire		
		Wire Diameter Test	SS 424 08 14	-----
		Breaking load Test		
		Conductor Resistance Test		

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