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			performed	

ELECTRICAL TESTING

Ι.	CABLES & ACCESS	SORIES		
1.	Armoured & unarmoured single/ twin/ three	Annealing Test (for Solid Copper Conductor)	IS: 1554 (Pt. 1) Amd 5 IS: 10810 (Pt. 1 IS: 8130 Amd 1	Up to 10 mm.sq. Cross -section
	and multi-core PVC Insulated and PVC Sheathed	Tensile Test for Aluminium conductor	IS: 1554 (Pt. 1) Amd 5 IS: 10810 (Pt. 2) IS: 8130 Amd 1	Up to 500 N Up to 5000 N
	Cables for working voltage up to & including	Wrapping test for Aluminium conductor	IS: 1554 (Pt. 1) Amd 5 IS: 10810 (Pt. 3) IS: 8130 Amd 1	Qualitative (Visual check)
	1100 Volt (Upto 400 sq mm)	Conductor Resistance	IS: 1554 (Pt. 1) Amd 5 IS: 10810 (Pt. 5) IS: 8130 Amd 1	0.2 micro ohms to 1.9999 kohms
		Thickness of Insulation	IS: 1554, Pt.1,Cl. 9,Amd 5 IS: 10810, Pt. 6	Up to 25 mm magnification 20 times
		Thickness of Sheath	IS: 1554,Pt.1,Cl.14,Amd 5 IS: 10810, Pt. 6	Up to 25 mm magnification 10 times
		Tensile Strength and Elongation at break of Insulation & Sheath	IS: 1554, Pt.1Amd 5 IS: 10810 Pt. 7 IS: 5831Amd 2	Tensile Up to 500 N Up to 5000 N Elongation up to 5000%
		Ageing in air oven	IS: 1554 Pt. 1Amd 5 IS: 10810,Pt. 11 IS: 5831 Amd 2	Ambient to 150 °C
		Shrinkage test for Insulation & Sheath	IS: 1554, Pt. 1Amd 5 IS: 10810, Pt. 12 IS: 5831 Amd 2	Ambient to 200 ⁰ C
		Loss of mass in air oven	IS: 1554,Pt. 1Amd 5 IS: 10810 ,Pt. 10 IS: 5831Amd 2	Ambient to 150 ^o C 200 mg

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		Heat Shock Test for Insulation & Sheath	IS: 1554, Pt. 1, Amd 5 IS: 10810,Pt. 14 IS:5831 Amd 2	Ambient to 200 ⁰ C
		Thermal stability	IS: 1554, Pt. 1, Amd 5	Ambient to 200 °C
		Insulation Resistance	IS: 1554, Pt. 1, Amd 5 IS: 10810, Pt. 43 IS: 5831Amd 2	1 Megaohms to 20 terra ohms
		High Voltage Test (Water Immersion)	IS: 1554,Pt. 1,Cl. 16.3, Amd 5 IS: 10810, Pt. 45	Up to 10 kV AC
		High Voltage Test (at room temperature)	IS: 1554, Pt.1,Cl 16.2, Amd 5 IS: 10810,Pt. 45	Up to 10 kV AC
		Oxygen Index Test	IS: 1554, Pt.1, Cl. 16.5, Amd 5 IS: 10810,Pt. 58	0 to 100 %
		Temperature Index Test	IS: 1554, Cl. 16.10, Pt.1, Amd 5 IS: 10810,Pt. 64	Up to 600 °C
2.	Armoured & unarmoured single/ twin/ three	Annealing Test (for Solid Copper Conductor)	IS: 7098,Pt.1,Amd 4 IS: 10810, Pt. 1 IS: 8130 Amd 1	Up to 10 mm.sq. cross-section
	and multicore XLPE Insulated and PVC	Tensile Test for Aluminium conductor	IS: 7098, Pt.1, Amd 4 IS: 10810, Pt. 2, IS: 8130 Amd 1	Up to 500 N Up to 5000 N
	Sheathed Cables for working voltage up to &	Wrapping test for Aluminium conductor	IS: 7098,Pt.1, Amd 4 IS:10810,Pt.3 IS: 8130 Amd 1	Qualitative (Visual check)
	including 1100 Volt (Upto 400 sq mm)	Conductor Resistance	IS: 7098,Pt.1, Amd 4 IS:10810, Pt. 5 IS: 8130, Amd 1	0.2 micro ohms to 1.9999 kohms
		Thickness of Insulation	IS: 7098, Pt.1, Amds 4 IS: 10810 Pt. 6	Up to 25 mm magnification 20 times
		Thickness of Sheath	IS: 7098,Pt.1 Cl.14 Amd 4 IS: 10810 (Pt. 6)	Up to 25 mm magnification 20 times

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		Shrinkage test for Insulation & Sheath	IS: 7098 (Pt.1) Amd 4 IS: 10810 (Pt. 12) IS: 5831Amds 2	Ambient to 200 ^o C
		Heat Shock Test for Insulation & Sheath	IS: 7098 (Pt.1) Amd 4 IS: 10810 (Pt. 14) IS: 5831 Amd 2	Ambient to 200 ⁰ C
		Thermal stability	IS: 7098 (Pt.1) Amd 4	Ambient to 200 ° C
		Insulation Resistance (Volume Resistivity)	IS: 7098 Table 1 (Pt.1), Amd 4 IS: 10810 (Pt. 43)	1 Megaohms to 20 terra ohms
		High Voltage Test (at room temperature)	IS: 7098 (Pt.1), Cl. 16.2, Amd 4 IS: 10810 (Pt. 45)	Up to 10 kV AC
		Oxygen Index Test	IS:7098 (Pt.1), Cl.16.9, Amd 4 IS: 10810 (Pt. 58)	0 to 100 %
		Temperature Index Test	IS:7098 (Pt. 1), Cl. 16.14, Amd 4 IS: 10810 (Pt. 64)	Up to 600 deg. C
3.	Single/ twin/ three and multicore PVC Insulated and	Annealing Test (for Solid Copper Conductor)	IS: 694 Amd 5, IS: 10810 (Pt. 1) IS: 8130 Amd 1	Up to 10 mm.sq. cross-section
	PVC Sheathed Cables for working voltage up to & including	Tensile Test (for Aluminium conductor)	IS: 694, Amds 5 IS: 10810 (Pt. 2) IS: 8130 Amd 1	Tensile Up to 500 N Up to 5000 N Elongation Up to 5000%
	1100 Volt (Upto 400 sq mm)	Wrapping test (for Aluminium conductor)	IS: 694 Amd 5 IS: 10810 (Pt. 3) IS: 8130 Amd 1	Qualitative (Visual check)
		Conductor Resistance	IS: 694 Amds 5 IS: 10810 (Pt. 5) IS: 8130 Amd 1	0.2 micro ohms to 1.9999 kohms
		Thickness of Insulation	IS: 694, Table 3 to 10 Amd 5, Amd 4, IS: 10810 (Pt. 6)	Up to 25 mm magnification 20 times

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		Overall dimensions and thickness of sheath	IS: 694, Table 3 to 10 Amd 5, IS: 10810 (Pt. 6)	
		Tensile Strength and Elongation at break of Insulation & Sheath	IS: 694 Amd 5 IS: 10810 (Pt. 7) IS: 5831 Amd 2	Tensile Up to 500 N Up to 5000 N Elongation up to 5000%
		Loss of mass in air oven	IS: 694 Amd 5 IS: 10810 (Pt. 10) IS: 5831Amd 2	Ambient to 150 ⁰ C 200 m
		Shrinkage test for Insulation & Sheath	IS: 694 Amd 5, IS: 10810 (Pt. 12) IS: 5831Amds 2	Ambient to 200 ^o C
		Heat Shock Test for Insulation & Sheath	IS: 694 Amd 5 IS: 10810 (Pt. 14) IS: 5831/1984(RA 2016), Amds 2	Ambient to 200 ⁰ C
		Thermal stability	IS: 694 Amd 5 IS: 10810 (Pt. 15) IS: 5831Amd 2	Ambient to 200 ^o C
		Insulation Resistance	IS: 694 Amd5 IS: 10810 (Pt. 43) IS: 5831 Amd 2	1 Megaohms to 20 terra ohms
		High Voltage Test (Water Immersion)	IS: 694, Cl. 10.1 Amd 5 IS: 10810 (Pt. 45)	Up to 10 kV AC
		High Voltage Test (at room temperature)	IS: 694, Cl. 10.2 Amd 5, IS: 10810 (Pt. 45)	Up to 10 kV AC
		Oxygen Index Test	IS: 694, Cl. 10.5 Amd 5 IS: 10810 (Pt. 58)	0 to 100%
		Temperature Index Test	IS: 694, Cl. 10.7 Amd 5 IS: 10810 (Pt. 64)	Up to 600 ºC

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II.	LAMPS, LUMINAIRI	ES & ACCESSORIES		
1.	Fixed General Purpose Luminaries	Visual Examination	IS: 10322 (Pt. 5/S- 1) Amd 1 IS: 10322 (Pt. 1)	Qualitative (Visual check)
		Provision for Earthing	IS: 10322 (Pt. 5/S- 1) Amd 1 IS: 10322 (Pt. 2) Cl.20	0 to 10 V 0 to 30 Amp
		Protection against Electric Shock	IS: 10322 (Pt. 5/S- 1) Amd 1 IS: 10322, Cl. 21(Pt. 2)	Standard test finger
		Insulation Resistance and Electric Strength	IS: 10322 (Pt. 5/S- 1)/ Amd 1 IS: 10322 Cl. 3 (Pt. 4)	Up to 20 terra ohms Up to 5 kV
		Resistance to Moisture	IS: 10322 (Pt. 5/S- 1) Amd 1 IS: 10322, Cl. 2 (Pt. 4)	40 to 95 % RH 10 to 60 ^o C
2.	Recessed Luminaries	Visual Examination	IS: 10322 (Pt. 5/S- 2) Amd 1 IS: 10322 (Pt. 1)	Qualitative (Visual check)
		Provision for Earthing	IS: 10322 (Pt. 5/S- 2) Amd 1 IS: 10322, Cl. 20(Pt. 2)	0 to 10 V 0 to 30 Amp
		Protection against Electric Shock	IS: 10322 (Pt. 5/S- 2) Amd 1 IS: 10322, Cl. 21(Pt. 2)	Standard test finger
		Insulation Resistance and Electric Strength	IS: 10322 (Pt. 5/S- 2) Amd 1 IS: 10322, Cl. 3 (Pt. 4)	Up to 20 terra ohms Up to 5 kV
		Resistance to Moisture	IS: 10322 (Pt. 5/S- 2) Amd 1 of IS: 10322, Cl. 2 (Pt. 4)	40 to 95 % RH 10 to 60 ^o C
3.	Luminaries for Road and Street Lighting	Visual Examination	IS: 10322 (Pt. 5/S- 3) Amd 1 IS: 10322 (Pt. 1)	Qualitative (Visual check)

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SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Provision for Earthing	IS: 10322 (Pt. 5/S- 3)	0 to 10 V
			IS: 10322, Cl. 20 (Pt. 2)	0 to 30 Amp
		Protection against Electric	IS: 10322 (Pt. 5/S-3)	Standard test finger
		Shock	Amd 1	
 			IS:10322, Cl. 21(Pt. 2)	
		Insulation Resistance and	IS: 10322 (Pt. 5/S- 3)	Up to 20 terra ohms
		Electric Strength	Amd 1	Up to 5 kV
			IS: 10322, Cl. 3 (Pt. 4)	
		Resistance to Moisture	IS: 10322 (Pt. 5/S- 3)	40 to 95 % RH
			Amd 1	10 to 60 °C
4	Deuteble Osuseel		IS: 10322, Cl. 2 (Pt. 4)	Manal ab a ala
4.	Portable General	Visual Examination	IS: 10322 Cl. 12.2	Visual check
	Purpose Luminaries		(Pt. 5/S- 4)	
	Luminaries	Drevision for Conthing	IS: 10322 (Pt. 1)	0 to 10 V
		Provision for Earthing	IS: 10322 (Pt. 5/S- 4)	
		Drataction against Floatria	IS: 10322 (Pt. 2) Cl. 20 IS: 10322 (Pt. 5/S- 4)	0 to 30 Amp Standard test finger
		Protection against Electric Shock	IS: 10322 (Pt. 5/S- 4)	Standard test linger
		Insulation Resistance and	IS: 10322 (Pt. 5/S- 4)	Up to 20 terra ohms
		Electric Strength	IS: 10322, Cl. 3 (Pt. 4)	Up to 5 kV
		Resistance to Moisture	IS: 10322 (Pt. 5/S-4)	40 to 95 % RH
			IS: 10322 , Cl. 21(Pt. 2)	10 to 60 deg C
5.	Flood Light	Visual Examination	IS: 10322, Cl. 12.2	Qualitative
	_		(Pt. 5/S- 5)	(Visual check)
			IS: 10322 (Pt. 1)	
		Provision for Earthing	IS: 10322 (Pt. 5/S- 5)/	0 to 10 V.
			Cl. 20	0 to 30 Amp
			10322 (Pt. 2)	
		Protection against Electric	IS: 10322 (Pt. 5/S- 5)/	Standard test finger
		Shock	2013 Clause # 21 of	
			IS: 10322 (Pt. 2)/1982	
			(RA 2015)	

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		Insulation Resistance and Electric Strength	IS: 10322 (Pt. 5/S- 5)/ Cl.3 IS: 10322 (Pt. 4)/1984 (RA 2015)	Up to 20 terra ohms Up to 5 kV
		Resistance to Moisture	IS: 10322 (Pt. 5/S- 5) Cl.2 IS: 10322 (Pt. 4)	40 to 5 % RH 10 to 60 deg C
6.	Self-Ballasted LED Lamps For	Marking	IS: 16102 (Pt. 1) Amd. 2	Qualitative (Visual check)
	General Lighting Services	Protection Against Electric Shock	IS: 16102 (Pt. 1) Amd 2	Standard test finger
		Insulation Resistance and Electric Strength	IS: 16102 (Pt. 1) Amd 2	Up to 20 terra ohms Up to 5 kV
		Resistance to Heat (Ball Pressure Test)	IS: 16102 (Pt. 1) Amd 2	Ambient to 200 deg C
III.	DOMESTIC ELECT			
1.	Food Mixer Grinder	Protection against electric shock	IS: 4250 Cl. 8 Amd 9 IS: 302-1, Amd 4	Qualitative
		Input & Current	IS: 4250, Cl. 10 Amd. 9 IS: 302-1, Amd 4	0 to 2000 W 0 to 20 A 0 to 250 V
		Leakage Current at operating Temperature	IS: 4250 Cl. 13 Amd. 9 IS: 302-1, Amd 4	Up to 1.999 mA
		Electric Strength Test	IS: 4250, Cl. 13 Amd. 9 IS: 302-1, Amd 4	Qualitative 0 to 5 kV. AC
		Moisture resistance Test	IS: 4250, Cl. 15 Amd. 9 IS: 302-1, Amd 4	Qualitative 40 to 95 % RH 10 to 60 deg C
		Insulation Resistance Test (After Moisture Treatment)	IS: 4250, Cl.16 Amd. 9 IS: 302-1, Amd 4	Up to 20 Terra ohms
		Provision for Earthing	IS: 4250, Cl. 27 Amd. 9 IS: 302-1 Amd 4	0 to 10 V 0 to 30 A

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		Resistance to Heat (Ball Pressure Test)	IS: 4250, Cl. 30 Amd. 9 IS: 302-1, Amd 4	Ambient to 200 ^o C
2.	Electric Ceiling Type Fan and Regulator	Fan Speed and Input	IS: 374, Cl. 10.9 Amd. 8	0 to 200/2000 W 0 to 2/20 A 0 to 250 V
		High Voltage	IS: 374, Cl. 10.6 Amd. 8	Qualitative 0 to 5 kV AC
3.	Electric Pedestal Type Fan and Regulator	Electrical Input Test	IS: 1169 Cl. 16.11 Amd. 6	0 to 200/2000 W 0 to 2/20 A 0 to 250 V
		Leakage Current Test High Voltage Test	IS: 1169, Cl. 16.8 Amd. 6 IS: 1169, Cl. 16.9 Amd. 6	Up to 1.999 mA Qualitative 0 to 5 kV AC
IV.	WIRING ACCESSO	RIES		
1.	Switches for Domestic and	Markings	IS: 3854, Cl. 8 Amd. 7	Qualitative (Visual check)
	similar purpose (6A,10A,& 16A)	Protection against electric shock	IS: 3854, Cl. 10 Amd. 7	Qualitative
		Terminals	IS: 3854, Cl. 12 Amd. 7	Qualitative 10 to 120 N cm 1 to 6 Nm
		Resistance to ageing, to harmful ingress of water and humidity	IS: 3854, Cl. 15 Amd. 7	Qualitative 0 to 200 ⁰ C 40 to 95 % RH 10 to 60 ⁰ C
		Insulation Resistance and Electric Strength	IS: 3854, Cl. 16 Amd. 7	(Qualitative) Up to 20 Terra ohms Up to 5 kV
		Temperature Rise	IS: 3854, Cl. 17 Amd. 7	Ambient to 200 ⁰ C

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		Making and Breaking	IS: 3854, Cl. 18 Amd. 7	(Qualitative)
		Capacity		Up to 25 Amp 300 V
		Normal Operation	IS: 3854, Cl. 19.1Amd. 7	(Qualitative) Up to 25 A 300 V
		Mechanical strength	IS: 3854, Cl. 20.1 & 20.2 Amd. 7	Qualitative 0.2/0.4 Nm
		Resistance to Heat	IS: 3854, Cl. 21 Amd. 7	Ambient to 200 ⁰ C 20 N
		Resistance to Abnormal Heat and Fire (Glow wire test)	IS: 3854, Cl. 24.1 Amd. 7	(Qualitative Ambient to 950 ^o C
2.	Plugs and Socket- Outlets	Checking of Dimensions	IS: 1293, Cl.9 Amd. 6	(Qualitative) 0 to 300 mm
		Protection against electric shock	IS: 1293, Cl. 10 Amds. 6	
		Terminals	IS: 1293, Cl. 12 Amd. 6	(Qualitative) 10 to 120 N cm 1 to 6 Nm
		Resistance to ageing, to harmful ingress of water and humidity	IS: 1293, Cl. 16 Amd. 6	(Qualitative) 40 to 95 % RH, 10 to 60⁰C
		Insulation Resistance and Electric Strength	IS: 1293, Cl. 17Amd 6	(Qualitative) Up to 20 Terra ohms 0 to 5 kV
		Temperature Rise	IS: 1293, Cl. 19 Amd. 6	Ambient to 200 0.C.
		Making and Breaking Capacity	IS: 1293, Cl. 20 Amd 6	(Qualitative) Up to 20 A
		Normal Operation	IS: 1293, Cl. 21 Amd. 6	(Qualitative) Up to 16 A
		Mechanical strength	IS: 1293, Cl. 24 Amd. 6	(Qualitative) 0.2/0.4 Nm

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		Resistance to Heat	IS: 1293, Cl. 25 Amd. 6	Ambient to 150 0C. 20N
		Resistance of insulating material to Abnormal Heat and Fire	IS: 14772, Cl. 15 Amd.1	Ambient to 950 0.C. (Qualitative)
3.	Enclosures for Accessories for	Markings	IS: 14772, Cl. 7 Amd.1	Qualitative (Visual check)
	Household and Similar Fixed	Protection against electric shock	IS: 14772, Cl. 9 Amd.1	(Qualitative)
	Electrical Installation	Provision for Earthing	IS: 14772, Cl. 10 Amd.1	0 to 10 V 0 to 30 A
		Resistance to ageing, to humid condition, ingress of solid objects and to harmful ingress of water	IS: 14772, Cl. 12 Amd.1 IS/IEC 60529	0 to 200 ⁰ C. 40 to 95 % RH &10 to 60 0.C IP 1X to 6X IP X3 to X7 (Qualitative)
		Resistance to Heat Resistance of insulating material to Abnormal Heat and Fire	IS: 14772, CL. 14 Amd.1 IS: 14772, Cl. 15 Amd.1	Ambient to 200 ^o C Ambient to 950 ^o C (Qualitative)
		Resistance to Tracking Test	IS: 14772, Cl. 17 Amd.1	0 to 750 V 0 to 2 A (Qualitative)