

Laboratory	Delhi Test House, A-62/3, G. T. Karnal Road Industrial Area, Azadpur, Delhi		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Electrical Testing	Issue Date	03.03.2014
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	CABLES & WIRES			
1.	PVC Insulated cables for Working voltage upto and including 1100 V IS: 694: 1990 RA 2005	a. Tests on conductor 1. Annealing test (for copper) 2. Tensile test (for Aluminium) 3. Wrapping test (for Aluminium) 4. Conductor Resistance test b. Test for overall dimension, thickness of insulation & sheath c. Physical test on insulation & sheath 2. Tensile strength & Elongation at break Ageing in air oven a. Tensile strength (after ageing) b. Elongation (after ageing)	Cl.6.2.3 IS: 8130-1984 IS:10810:(Pt-1) :1984-RA 2001 Cl.6.2.1IS: 8130-1984 IS:10810: (Pt-2) :1984- RA2001 Cl 6.2.2 IS: 8130-1984 IS:10810 :(Pt-3):1984 RA2001 Cl.6.3 of IS: 8130-1984- IS:10810: (Pt-5) : 1984 RA2001 Cl.10,13 &14 of IS: 694-1990 IS:10810: (Pt-6) :1984- RA2001 Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-7) :1984- RA2001 Cl.4.1 of IS: 5831-1984 IS:10810: (Pt-11) :1984 RA2001	Up to 400 N LC 0.1N Up to 10000 N LC 1N Up to 400 N LC 0.1N Up to 10000 N LC 1N Visual test 0.2 $\mu\Omega$ to 11 Ω LC 0.02 m Ω Up to 300mm LC 0.01mm Up to 25mm LC 0.001mm Up to 400 N LC 0.1N Up to 10000 N LC 1N Ageing oven Up to 200°C LC 0.1°C

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		Shrinkage tests	Cl.4.1 of IS: 5831-1984 IS:10810: (Pt-12) :1984- RA2001	Up to 300mm LC 0.05mm, Oven upto250°C LC 1°C
		Hot deformation tests	Cl.4.1 of IS: 5831-1984- IS:10810 :(Pt-15) :1984 RA2001	Oven up to 250°C LC 1°C
		Loss of mass in air oven	Cl.4.1 of IS: 5831-1984- IS:10810 :(Pt-10) :1984 RA2001	Air oven up to 200°C LC 0.1°C
		Heat shock tests	Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-14) :1984 RA2001	Oven upto 250°C LC 1°C Different type of Mandrel
		Insulation resistance test	Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-43) :1984 RA2001	10M Ω to 1000M Ω X 10 ⁶ 500 V DC
		High voltage (water immersion AC test)	Cl.16.2 of IS: 694-1990- IS:10810: (Pt-45) :1984- RA2001	Upto10kV, 22 kVA LC 0.2kV
		High voltage (water immersion D.C. test)	Cl.4.1 of IS: 694-1990- IS:10810: (Pt-45) :1984 RA2001	Upto 3kV LC 0.1kV
		A.C. High voltage at room temp.	Cl.16.3 of IS: 694-1990 IS:10810 : (Pt-45): 1984 RA2001	Upto 10 kV LC 0.2kV
		Flammability test	Cl.16.5 of IS: 694-1990- IS:10810: (Pt-53) :1984- RA2001	Upto 610mm, LC 1mm
		Cold bend	IS:5831-1984 IS:10810 : (Pt-20): 1984- RA2001	Visual test

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		Cold impact	IS:5831-1984 IS:10810: (Pt-21) :1984- RA 2001	Visual test
		Category C1		
		i) Oxygen Index Test	Clause 15.1.1 & 16.8 Table 8A Category C1 a) of IS 694:1990 & IS 10810: (Pt-58) : 1998/RA 2003	Upto 100%, LC 0.1% Temp: up to 399°C LC:1°C
		ii) Temperature Index	Clause 15.1.1 & 16.13 Table 8A Category.C1 b) of IS 694:1990 & (Pt-64) IS: 10810-03 Reaf.2008	Upto 100%, LC 0.1% Temp: up to 399°C LC:1°C
		Category C2		
		i) Oxygen Index Test	Clause 15.1.1 & 16.8 Table 8A Category C2 a) of IS 694:1990 & IS 10810: (Pt-58): 1998 RA2003	Upto 100%, LC 0.1% Temp: up to 399°C LC:1°C
		ii) Smoke Density	Clause 15.1.1 & 16.14 Table 8A CategoryC2 b) of IS 694:1990 & ASTM D-2843: 77	Upto 100%
		iii) Test for halogen acid gas evolution	Clause 15.1.1 & 16.12 Table 8A CategoryC2 c) of IS 694:1990 & IS 10810: (P-59) : 1988 RA2005	Furnace Temp: Up to 1300°C LC:1°C Gas Flow Meter 30 to 300cc/min LC:10cc/min.
		iv) Temperature Index	Clause 15.1.1 & 16.13 Table 8A CategoryC2 d) of IS 694:1990 & IS 10810: (P-64) : 2003 RA2008	Upto 100%, LC:0.1% Temp: Up to 399°C LC:1°C

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2.	PVC Insulated (Heavy Duty) Electric cables Part-1 for working voltage upto and including 1100 volts IS: 1554-1988	a. Tests on conductor		
1. Annealing test (for copper)		Cl.6.2.3 IS: 8130-1984 IS:10810: -(Pt-1) :1984 RA2001	Upto 400 N, LC=0.1N, Upto 10000N LC=1N	
2. Tensile test (for Aluminium)		Cl.6.2.1 IS: 8130-1984-2 IS:10810: (Pt-2):1984 RA2001	Up to 400N, LC=0.1N, Upto 10000N LC=1N	
3.. Wrapping test (for Aluminium)		Cl 6.2.2 IS: 8130-1984- IS:10810: (Pt-3) :1984 RA 2001	Visual test.	
4. Conductor Resistance test		Cl.6.3 of IS: 8130-1984- IS:10810: (Pt-5) :1984 RA2001	0.2 $\mu\Omega$ to 11 Ω LC 0.02 m Ω	
b. Thickness of insulation and sheath		Cl.09.12 & 14 of IS: 1554 RA 2005.1986 IS:10810: (Part-6) :1984	Upto 300mm LC=0.01mm Upto 25mm LC=0.001mm	
Physical test on insulation & sheath Tensile strength & Elongation at break		Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-7) :1984 RA2001	Upto 400N, LC=0.1N, Upto 10000N LC=1N	
Ageing in air oven		Cl.4.1 of IS: 5831-1984-(Pt-11)- IS:10810.RA2001	Ageing oven 0 to 200°C LC=0.1°C	
a. Tensile strength (after ageing)				
b. Elongation (after ageing)				

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		Shrinkage test	Cl.4.1 of IS: 5831-1984- IS:10810: (P-12) :1984 RA2001	Oven up to 250°C LC=1°C Upto 300mm LC=0.05mm
		Hot deformation test	Cl.4.1 of IS: 5831-1984- (Pt-15)IS:10810 RA2001	Oven up to 250°C LC=1°C
		Heat shock test	Cl.4.1 of IS: 5831-1984- IS:10810: (P-14) : 1984 RA2001	Oven up to 250°C LC=1°C Different type of Mandrel
		Thermal stability	Cl.4.1 of IS: 5831-1984- IS:10810 :(P-60): 1988. RA2005	Ambient -200°C LC=0.1°C
		Loss of mass in air oven	Cl.4.1 of IS: 5831-1984- IS:10810: (P-10) : 1984 RA2001	Air oven Upto 200°C LC= 0.1°C
		Heat shock tests	Cl.4.1 of IS: 5831-1984- IS:10810: (P-14):1984 RA 2001	Oven upto 250°C LC=0.1°C Different type of mandrel
		Insulation resistance test	Cl.4.1 of IS: 5831-1984- IS:10810: (P-43):1984 RA.2001	10 MΩ x 1000MΩ x 10 ⁶ 500VDC
		High voltage (water immersion AC test)	Cl.16.2 of IS: 1554(Pt-1)1988 IS:10810: (Pt-45):1984 RA2001	Upto 10kV, 22 kVA LC=0.2kV

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		High voltage (water immersion D.C. test)	Cl.16.3 of IS: 1554(P-1)1988 IS:10810 : (Pt-45):1984 RA2001	Upto 3kV LC=0.1kV
		A.C. High voltage at room temp.	Cl.16.3 of IS: 1554(P-1)1988 IS:10810 : (Pt-45):1984 RA2001	Upto 10kV ₁ 22kVA 100 amp LC= 0.2kV
		Flammability test	Cl.16.4 of IS: 1554(P-1)1988 IS:10810 : (Pt-53):1984 RA2001	Stop Watch LC=0.1 second weight balance
		Cold bend	Cl 4.1 IS:5831-1984 IS:10810: (Pt-20) :1984 RA2001	Visual test -20 to 50° C, LC 0.1 ° C Different type of mandrel
		Cold impact	Cl 4.1 IS:5831-1984 IS:10810:(Pt-21) :1984 RA2001	-20 to 50° C, LC 0.1 ° C Visual test
	Category C1	i) Oxygen Index Test	Clause 15.1.1 & 16.5 category C1 a) of IS 1554(P-1):1988 & IS 10810 (Pt-58):1998 RA2003	Up to 100%, LC:0.1% Temp:0-399°C LC:1°C
		ii) Flame Retardance test for single cable	Clause 15.1.1 & 16.6 category C1 b) of IS 1554(P-1):1988 & IS 10810 (Pt-61):1988 -2005	Dimensions : scale: Upto 1000 mm LC:0.5mm
		iii) Flame Retardance test for bunched cable	Clause 15.1.1 & 16.7 category C1 c) of IS 1554(Pt-62):1993 RA2003	-
		iv) Temperature Index	Clause 15.1.1 & 16.10 category C1 d) of IS 1554(P-1):1988 & IS 10810 (Pt-64):2003 RA2008	Upto 100%, LC:0.1% Temp: Upto399°C LC:1°C

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		Category C2		
		i) Oxygen Index Test	Clause 15.1.1 & 16.5 category C2 a) of IS 1554(Pt-1):1988 & IS 10810 (Pt-58):1998 RA2003	Up to100%, LC:0.1% Temp: up to399°C LC:1°C
		ii) Flame Retardance test for single cable	Clause 15.1.1 & 16.6 category C2 b) of IS 1554(Pt-1):1988 & IS 10810 (P-61):1988 RA2005	Dimensions : scale: 0 to 1000 mm LC:0.5mm
		iii) Flame Retardance test on bunched cable	Clause 15.1.1 & 16.7 category C2 c) of IS 1554(P-1):1988 & IS 10810 (Pt-62):1993 RA2003	-
		iv) Smoke density	Clause 15.1.1 & 16.11 category C2 e) of IS 1554(P-1):1988 & IS 10810 (P-63):1993 RA2003 & ASTM-2863	-
		v) Test for halogen acid gas evolution	Clause 15.1.1 & 16.9 category C2 f) of IS 1554(Pt-1):1988 & IS 10810 (P-59):1988 RA2005	Furnace Temp: 0 to 1300°C LC:1°C Gas Flow Meter 30 to 300cc/min LC:10cc/min.
		vi) Temperature Index	Clause 15.1.1 & 16.10 category C2 g) of IS 1554(Pt-1):1988 & IS 10810 (P-64):2003 RA2008	Upto100%, LC:0.1% Temp: Upto399°C LC:1°C

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3.	Specification for cross linked Polythene insulated PVC Sheathed cables Part 1 for working voltage upto deed including 1100 V IS: 7098(P-1)-1988 RA2005	Tests on conductor Annealing test (for copper)	Cl.6.2.3 IS: 8130-1984, IS:10810-(pt-1) 1984 RA2001	0 to 400N LC=0.1N 0 to 10000N LC=1N
Tensile test (for Aluminium)		Cl.6.2.1 IS: 8130-1984, IS:10810-(Pt-2) 1984 RA2001	0 to 400N LC=0.1N 0 to 10000N LC=1N	
Wrapping test (for Aluminium)		IS: 8130-1984, IS:10810-(Pt-3) 1984 RA2001	Visual	
Resistance test		Cl.6.3 of IS: 8130-1984 IS:10810(Pt-5):1984 RA2001	0.2 $\mu\Omega$ to 11 Ω LC 0.02 m Ω	
Test for thickness of insulation & sheath		Cl.9, 12 &14 Table 2.4&6 IS:7098- (Pt-1) 1988 IS:10810 (P-6)-1984 RA2001	0 to 300 mm LC=0.01 mm 0 to 25 mm LC=0.001mm	
Physical test for insulation Tensile strength and elongation at break		Table-1 of IS: 7098- (pt-1) 1988 IS:10810: -(PT-7): 1984 RA 2001	0 to 400N LC=0.1N 0 to 10000 LC=1N	
Ageing in air oven a. Tensile strength (after ageing) b. Elongation (after ageing)		Table-1 of IS: 7098- (pt-1) 1988 IS:10810: (Pt-11) :1984 RA 2001	0 to 200°C LC=0.1°C	

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		Shrinkage tests	Table-1 of IS: 7098- (Pt-1) 1988 IS:10810: (Pt-12) :1984 RA 2001	Oven up to 250°C LC=1°C 0 to 300mm LC=0.01mm
		Hot Set Test	IS 7098(P-1):1988 & IS 10810(Pt-30):1984 RA 2001	0 to 250°C LC:0.1°C 0 to 300mm LC:0.5mm
		Water absorption test (gravimetric)	IS 7098(P-1):1988 & IS 10810(Pt-33):1984 RA 2011	0 to 100°C LC:0.1°C 0-250°C LC:1°C 0 to 200 gm LC:0.0001gm
		Physical tests for outer sheath Tensile strength & elongation at break	Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-7): 1984 RA 2001	0 to 400N LC=0.1N 0 to 10000 N LC=1N
		Ageing in air oven	Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-11): 1984 RA 2001	0 to 200°C LC=0.1°C
		Loss of mass in air oven	Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-10): 1984 RA 2001	0 to 200°C LC=0.1°C
		Shrinkage test	Cl.4.1 of IS:5831-1984- IS:10810 : (P-12) : 1984 RA2001	Oven up to 250°C LC=1°C 0-300mm LC=0.01mm
		Hot deformation test	Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-15): 1984 RA 2001	Oven Upto 250°C LC=1°C

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		Heat shock test	Cl.4.1 of IS: 5831-1984- IS:10810: (Pt-14): 1984 RA 2001	Oven up to 250°C LC=1°C Different type of mandrel
		Thermal stability	Cl.4.1 of IS: 5831-1984- IS: 10810: (Pt-60): 1988 RA 2005	Ambient temp – 200°C LC=0.1°C
		Insulation resistance	Table-1 of IS: 7198-1984- IS: 10810: (Pt-43): 1984 RA 2001	10M Ω to 1000M Ω X 10 ⁵ , 500V DC
		High voltage test	Cl.16.2 of IS: 7098-1988- IS:10810: (Pt-45): 1984 RA2001	0 to10kV, LC:0.2kV
		flammability test	Cl.16.3 of IS: 7098-1988- IS:10810: (Pt-53) : 1984 RA 2001	Stop watch LC: 0.1 s ±5%, weight balance 0 to 12kg LC:1 gm
		Cold bend test for outer sheath	IS:5831-1984 IS:10810: (Pt-20): 1984 RA 2001	-20 to ±100°C, LC:0.1°C Visual
		Cold impact test for outer sheath	IS:5831-1984 IS:10810: (Pt-21): 1984 RA 2001	-20 to±100°C, LC:0.1°C Visual
		Category C1 i) Oxygen Index Test	Clause 15.1.1 & 16.9 Table C1 a) of IS 7098(Pt-1):1988 & IS 10810 (P-58):1988 RA 2003	Up to 100%, LC:0.1% Temp: Upto 399°C LC:1°C
		ii) Flame Retardance test for single cable	Clause 15.1.1 & 16.10 Table C1 b) of IS 7098(P-1):1988 & IS 10810 (Pt-61):1988 Reaf.2005	Dimensions : scale:0-1000 mm LC:0.5mm

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		iii) Flame Retardance test for bunched cable	Clause 15.1.1 & 16.11 Table C1 c) of IS 7098(Pt-1):1988 & IS 10810 (P-62):1993 Reaf.2003	-
		iv) Temperature Index	Clause 15.1.1 & 16.14 Table C1 d) of IS 7098(P-1):1988 & IS 10810 (P-64):2003 Reaf.2008	Upto 100%, LC:0.1% Temp: up to399°C LC:1°C
	Category C2	i) Oxygen Index Test	Clause 15.1.1 & 16.9 Table C2 a) of IS 7098(Pt-1):1988 & IS 10810 (P-58):1998 RA 2003	0 to 100%, LC:0.1% Temp:0 to 399°C LC:1°C
		ii) Flame Retardance test for single cable	Clause 15.1.1 & 16.10 Table C2 b of IS 7098(P-1):1988 & IS 10810 (Pt-61):1988 Reaf.2005	Dimensions : scale: 0 to 1000 mm LC:0.5mm
		iii) Flame Retardance test on bunched cable	Clause 15.1.1 & 16.11 Table C2 c of IS 7098(P-1):1988 & IS 10810 (Pt-62):1993 Reaf.2003	-
		iv) Smoke density	Clause 15.1.1 & 16.15 Table C2 e of IS 7098:1988 & ASTM D-2843: 77	-
		v) Test for halogen acid as evolution	Clause 15.1.1 & 16.13 Table C2 f)of IS 7098(Pt-1):1988 & IS 10810 (P-59):1988 Reaf.2005	Furnace Temp: 0 to 1300°C LC:1°C Gas Flow Meter 30 to 300ml/min LC:10ml/min.
		vi) Temperature Index	Clause 15.1.1 & 16.14 Table C2 g) of IS 7098(Pt-1):1988 & IS 10810 (tP-64):2003 Reaf.2008	Upto100%, LC:0.1% Temp: up to399°C LC:1°C

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4.	Cable for motor Vehicles (IS: 2465-1984 (Reaffirmed 2001))	i) Annealing test (for copper)	Cl 3.1 & Cl 12.1 a) of IS: 2465-1984. Cl: 6.2.3 IS 8130:1984, IS 10810 (Pt-1):1984 RA 2001	0 to 400N, LC:0.1N, 0 to 10000N LC:1N
		ii) Persulphate test (for Tinned copper) only	Cl 13.1 & 12.1 b of IS 2465:1984. Cl 6.1 of IS :8130:1984 & IS 10810(Pt-4):1984 RA 2001	Electrical Balance Range 0 to 200g LC:0.1 mg
		iii) Conductor resistance test.	Cl: 12.1 c) of IS 2465:1984 Cl.6.3 of IS 8130:1984 & IS 10810 (P-5):1984 RA 2001	0.2 $\mu\Omega$ to 11 Ω LC 0.02 m Ω
		iv) Test for overall dimension, thickness, of insulation & sheath	Cl -12.1 d) IS 2465:1984 Table No. 1 & 2 IS 10810 (Pt-6):1984 RA 2011	0 to 300 mm LC:0.01 mm 0 to 25 mm LC:0.001 mm
		v) Physical test for PVC insulations sheath		-
		a) Tensile Strength and	Cl 12.1 e) 1 to 6 of IS 2465:1984	0 to 400 N, LC: 0.1N
		b) Elongation at break	IS 10810 (Pt-7):1984 RA 2001	0 to 10000N LC:1N
		c) Ageing in air oven a. Tensile strength (after ageing) b. Elongation (after ageing)	IS 10810 (Pt-11):1984 RA 2001	0 to 400 N, LC: 0.1N 0 to 10000N LC:1N

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		d) Loss of mass test	IS 10810 (Pt-10):1984 RA 2011	0 to 200°C LC:0.1°C, 0 to 200g LC:0.1 mg
		e) Hot deformation test	IS 10810 (Pt-15):1984 RA 2011	0 to 250°C LC:1°C,
		f) Heat shock test	IS 10810 (Pt-14):1984 RA 2011	0-250°C LC:1°C, Different type of mandrel
		g) Shrinkage test	IS 10810 (P-12):1984 RA 2011	0 to 250°C LC:1°C, 0 to 300mm LC: 0.5mm
		vi) Physical test for elastomeric insulation		
		a) Tensile strength and	Cl 12.1 f)1 to 3 of IS 2465:1984	0 to 400 LC:0.1N
		b) Elongation at break	IS 6380:1984 IS 10810(P-7):1984 RA .2001	0 to 10000N LC:1N
		c) Ageing in air oven	IS 6380:1984	0 to 200 °C ,
		a. Tensile strength (after ageing)	IS 10810 (Pt-11):1984 RA 2001	LC:0.1°C, 0 to 10000N
		b. Elongation (after ageing)		LC:1N
		d) Ageing in oxygen bomb	IS 2465:1984	0 to 400 °C ,
		a. Tensile strength (after ageing)	IS 10810 (Pt-45):1984 RA 2001	LC:1°C, 0 to 2500N
		b. Elongation (after ageing)		LC:5N

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		vii)High voltage test	IS 2465:1984 IS 10810 (Pt-45):1984 RA 2011	0 to 5 kV LC:0.1kV 0 to 10kV, LC:0.1kV
		viii)Capacitance test (for PVC ignition cable	IS 2465:1984	0 to 1000 µF LC:1µF
		ix)Ozone resistance test (for ignition cable)	IS 2465:1984	0 to 75 kV LC:3kV
		x)Effect of heat on flexibility (for ignition cable)	IS 2465:1984	0 to 250 °C ,LC:1°C, 0 to 75 kV LC:3kV
		xi)Effect of oil (for ignition cable)	IS 2465:1984	0 to 250 °C ,LC:1°C, 0 to 75 kV LC:3kV
		xii)Effect of lubricating oil, brake fluid, diesel and petrol (for general wiring cable)	IS 2465:1984	0 to 250 °C, LC:1°C 0 to 300mm LC:0.01mm
		xiii)Effect of cooling on Flexibility	IS 2465:1984	-20 to 50 °C LC:0.1°C LC:0.5mm
		xiv) a)Cold bend	IS 2465:1984 IS 10810 (Pt-21):1984 RA.2001	-20 to 50 °C LC:0.1°C Different type of mandrel
		b)Cold impact	IS 2465:1984 IS 10810 (P-22):1984 RA 2001	-20 to 50 °C LC:0.1°C
		xv)Flammability test	IS 2465:1984	0 to 610mm LC:0.05mm

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
5.	Aerial Bunched cables (IS:14255-1955)	i)Tensile test for conductor	CI-6.2.1 IS 8130:1984 IS 10810(Pt-2):1984 RA.2001	0 to 400N, LC:0.1N, 0 to 10000N LC:1N
		ii)Wrapping test	IS 8130:1984 IS 10810(Pt-3):1984 RA 2001	Visual Test
		iii)Conductor resistance test	CI -6.3 of IS 8130:1984 IS 10810(Pt-5):1984, IS 14255:1995 RA 2001	0.2 $\mu\Omega$ to 11 Ω LC 0.02 m Ω
		iv		
		a) Breaking load test	IS 14255:1995	0 to 500kN, LC:100N
		b)Elongation test	IS 14255:1995	0 to 10000N, LC:5N
		v)		
		a)Tensile strength and b)Elongation at break	IS 14255:1995 IS 10810(Pt-7):1984 RA 2011	0 to 400N, LC:0.1N, 0 to 10000N LC:1N
		c) Ageing in air oven	IS 14255:1995	0 to 200°C, LC:0.1°C
		a. Tensile strength (after ageing) b. Elongation (after ageing)	IS 10810(Pt-11):1984 RA 2011	0 to 10000N, , LC:1N
		d)Hot set	IS 14255:1995 IS 10810(Pt-30):1984 RA 2011	0 to 250°C, LC:0.1°C
		e)Shrinkage test	IS 14255:1995 IS 10810(Pt-12):1984 RA 2011	0 to 250°C, LC:1°C 0 to 300 mm , LC:0.5mm

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		f)Water absorption (Gravimetric)	IS 14255:1995 IS 10810(Pt-33):1984 RA 2011	0 to 100°C LC:0.1°C 0 to 200g LC: 0.1 mg
		vi)Test for PE Insulation a)Melt flow index test	IS 14255:1995 IS 10810(Pt-23):1984 RA 2011	0 to 200°C LC:0.1°C
		b)Vicat Softening point	IS 14255:1995 IS 10810(Pt-22):1984 RA 2011	0 to 200°C LC:0.1°C
		c)Carbon black content	IS 14255:1995 IS 10810(P-32):1984 RA 2011	0 to 600°C LC:1°C
		d)Environment stress cracking	IS 14255:1995 IS 10810(Pt-29):1984 RA 2011	0 to 250°C LC:1°C
		vii)Thickness of insulation	IS 14255:1995 IS 10810(Pt-8):1984 RA 2011	0 to 300 mm LC:0.01mm 0 to 25 mm LC:0.001mm
		viii)Insulation Resistance test	IS 14255-1995 IS 10810(Pt-43):1984RA 2011	10 MΩ-1000 MΩ X 10 ⁶ LC: Different for every range.
		ix)High Voltage test	IS 14255:1995 IS 10810(Pt-45):1984 RA 2011	0 to 10 kV, LC: 0.2 kV 0 to 5 kV LC: 0.1kV
		x) Bending Test on complete cable	IS 14255:1995	Mandrels of different sizes.

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6.	Specification for Elastomer insulated Cable for Working Voltage upto and including 1100 V	i)Persulphate test (for copper)	CI-6.1 of IS 8130:1984 IS 10810(Pt-4):1984	Electrical balance 0 to 200 g, LC:0.01mg
		ii)Annealing test (for copper)	CI-6.2.3 IS 8130:1984 IS 10810(Pt-1):1984 RA 2011	0 to 400N, LC:0.1 N, 0 to 10000N, LC: 1N
		iii)Tensile test (for aluminum)	IS 8130:1984 IS 10810(Pt-2):1984 RA 2011	0 to 400N, LC:0.1 N, 0 to 10000N, LC: 1N
		iv)Wrapping test (for aluminum)	IS 8130:1984 IS 10810(Pt-3):1984 RA 2011	Visual Test
		v)Conductor resistance test	IS 8130:1984 IS 10810(P-5):1984 RA 2011	0.2 $\mu\Omega$ to 11 Ω LC 0.02 m Ω
		vi)Test for thickness of insulation & sheath and overall diameter	IS 9968(Pt-1):1988 IS 10810 (Pt-6):1984 RA 2011	0 to 300mm, LC :0.01mm, 0 to 25mm, LC:0.001 mm
		vii)Physical test for insulation & sheath		
		a)Tensile strength & b)Elongation at break	IS 6380 :1984 IS 10810 (Pt-7):1984 RA 2011	0 to 400N, LC:0.1 N, 0 to 10000N, LC: 1N
		c)Ageing in air oven a. Tensile strength (after ageing) b. Elongation (after ageing)	IS 6380 :1984 IS 10810 (Pt-11):1984 RA 2011	0 to 200°C, LC:0.1°C
		d)Ageing in air bomb a. Tensile strength (after ageing) b. Elongation (after ageing)	IS 6380 :1984 IS 10810 (Pt-16):1984 RA 2011	0 to 400°C, LC:0.1°C

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		e)Ageing in oxygen bomb test a. Tensile strength (after ageing) b. Elongation (after ageing)	IS 6380 :1984 IS 10810 (Pt-16):1984 RA 2011	0 to 400°C, LC:0.1°C
		f)Hot set test	IS 6380 :1984 IS 10810 (Pt-30):1984 RA 2011	0 to 250°C, LC:0.1°C
		g)Oil resistance test	IS 6380 :1984 IS 10810 (Pt-31):1984 RA 2011	0 to 250°C, LC :1°C, 0 to 400 N, LC:0.1 N 0 to 10000N, LC: 1N
		h)Tear resistance test	IS 6380 :1984 IS 10810 (Pt-17):1984 RA 2011	0 to 25 mm, LC:0.001 mm 0 to 400N, LC:0.1 N, 0 to 10000N, LC: 1N
		viii)Insulation resistance test	IS 10810 (Pt-43):1984 RA 2011	10 MΩ -1000MΩ X 10 ⁶ , 500 Volt DC Bath 0 to 200°C LC:0.1°C
		ix)High voltage test at room temperature	Cl. No. 22.2 IS 9968 (Pt-1):1988 IS 10810 (Pt-45):1984 RA 2011	0 to 10 kV LC:0.2 kV 0 to 5kV LC:0.1kV
		x)High voltage (water immersion test)	IS 9968 (Pt-1):1988 IS 10810 (Pt-43):1988 RA 2011	0 to10kV LC:0.2 kV Bath 0 to 100°C, LC:0.1°C

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		xii)Flammability test	IS 9968 (Pt-1):1988 IS 10810 (Pt-53):1988 RA 2011	0 to 610 mm LC:0.5mm
7.	Test for round steel wire /fomed steel wire (strip) armour IS:1554(P-1)-1988	1)Dimension	Cl. 13.3 of IS:1554 (P-1)-1988 & IS:10810 (Pt-36)-1984	Upto 300 mm, LC:0.01mm Upto 25mm, LC:0.001mm
		2)Physical test on round /formed wire		
		a) Tensile Strength	Cl. 13.6 (a) of IS:1554 (Pt-1)-1988 & IS:10810 (Pt-37)-1984	Upto 400N, LC:0.1N Upto 10000N, LC:1N
		b)Elongation at break	Cl. 13.6 (b) of IS:1554 (Pt-1)-1988 & IS:10810 (Pt-37)-1984	Upto 400N, LC:0.1N Upto 10000N, LC:1N
		c)Torsion test for round wire	Cl. 13.6 (c) of IS:1554 (Pt-1)-1988 & IS:10810 (Pt-38)-1984	Qualitative
		d) winding test for formed wire	Cl. 13.6 (d) of IS:1554 (Pt-1)-1988 & IS:10810 (Pt-39)-1984	Qualitative
		e) Uniformity of Zinc coating	Cl. 13.6 (e) of IS:1554 (Pt-1)-1988 & IS:10810 (Pt-40)	0 to 200gm, LC: 0.1mg
		f)Mass of zinc coating	Cl. 13.6 (f) of IS:1554 (P-1)-1988 & IS:10810 (Pt-41)-1984	0 to 200gm, LC: 0.1mg 0 to 300mm, LC:0.01mm 0 to 25mm, LC:0.001mm

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		g) Resistivity	Cl. 13.6 (g) of IS:1554 (Pt-1)-1988 & IS:10810 (Pt-42)-1984	0-02 $\mu\Omega$ -11 Ω , LC: 0.02 $\mu\Omega$
8.	Test for round steel wire /formed steel wire (strip) armour IS:7098 (P-1)-1988	1)Dimension	Cl. 13.3 of IS:7098(Pt-1)-1988&IS:10810 (Pt-36)-1984	Upto 300 mm, LC:0.01mm Upto 25mm, LC:0.001mm
		2)Physical test on round formed wire		
		a) Tensile Strength	Cl. 13.6 (a) of IS:7098(Pt-1)-1988&IS:10810 (Pt-37)-1984	Upto 400N, LC:0.1N Upto 10000N, LC:1N
		b)Elongation at break	Cl. 13.6 (b) of IS:7098(Pt-1)-1988&IS:10810 (Pt-37)-1984	Upto 400N, LC:0.1N Upto 10000N, LC:1N
		c)Torsion test for round wire	Cl. 13.6 (c) of IS:7098(tP-1)-1988&IS:10810 (Pt-38)-1984	Qualitative
		d) winding test for formed wire	Cl. 13.6 (d) of IS:7098(Pt-1)-1988&IS:10810 (Pt-39)-1984	Qualitative
		e) Uniformity of Zinc coating	Cl. 13.6 (e) of IS:7098(Pt-1)-1988&IS:10810 (Pt-40)-1984	0 to 200gm, LC: 0.1mg
		f)Mass of zinc coating	Cl. 13.6 (f) of IS:7098(Pt-1)-1988&IS:10810 (Pt-41)-1984	0 to 200gm, LC: 0.1mg 0 to 300mm, LC:0.01mm 0-25mm, LC:0.001mm

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		g) Resistivity	Cl. 13.6 (g) of IS:7098(P-1)-1988&IS:10810 (P-42)-1984	0-02 $\mu\Omega$ -11 Ω , LC: 0.02 $\mu\Omega$
II.	INSULATING MATERIALS & INSULATORS			
1.	Petroleum Products	Specific Resistance	IS:6103:1971, Reaff:2001, amd 1	(0.005 to 4000)x 10 ¹² Ω cm
		Tan Delta	IS:6262:1971, Reaff:2001	0.01 to 9.99
		Di-electric strength	IS:67 92:1992, Reaff:2003, amd 1	3 to 60kV
2.	New insulating oil IS:335-1993	Specific Resistance	IS: 6103-1971 RA2001, amd-1	(10 to 1000)x 10 ¹² m Ω 500V
		Tan Delta	IS: 6262-1971 RA 2001 amd, 1	0.0001 to 19.99
		Di- Electric Strength	IS: 6792-1992 RA2001 amd-1	0 to 75kV, LC: 0.1kV
3.	Lubricant Oil & Grease Insulating Oil, Hydraulic Oil	Specific Resistance	IS: 6103-1971 RA 2001, amd-1	(10 to 1000)x 10 ¹² m Ω 500V
		Tan Delta	IS: 6262-1971 RA 2001 amd, 1	0.0001to19.99
		Di- Electric Strength	IS: 6792-1992 RA2001 amd-1	0 to75kV, LC: 0.1kV
III.	WIRING ACCESSORIES			
1.	Plug and socket outlet of rated voltage upto and including 250 V and rated current upto and including 16 A IS:1293-2005	Rating	Cl .6.1 & 6.2 & Table 1 IS:1293-2005	Up to 16A/250V
		Classification	Cl .7.1 & 7.3 IS:1293-2005	Up to 16A/250V Without shutter flush type

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		Marking	Cl .8.2 to 8.7 IS:1293-2005	Up to 16A/250V
		Protection against electric shock	Cl .10.1 to 10.6 IS:1293-2005	0 to100V LC:1 Volt
		Provision for earthing	Cl .11.1 to 11.5 IS:1293-2005	0 to 5V, LC 0.1V 0 to 30A, LC 1A
		Terminals	Cl .12.1 to 12.3.12 Table 3 to 10 IS:1293-2005	0 to 300mm, LC 0.01 mm 0 to 80N
		construction requirements of Fixed socket outlet	Cl .13.1 to 13.23 Table 11 to 14, IS:1293-2005	Visual
		construction of plug and portable socket outlets	Cl .14.1 to 14.25 IS:1293-2005	Qualitative 0 to 300 mm LC:0.01mm
		interlocked socket-outlet	Cl .15 IS:1293-2005	Qualitative
		Resistance to ageing	Cl .16.1 IS:1293-2005	Temp : 0 to 250°C LC: 1°C Humidity: 0 to 95% LC:1%
		Resistance to Humidity	Cl .16.3 IS:1293-2005	0 to 95% LC: 1%RH 0 to 100°C LC:0.1°C
		Insulation Resistance (after humidity)	Cl .17.1 to 17.3 IS:1293-2005	(2-infinity) mΩ LC:±500V DC

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2.	Switches for (Domestic and Similar Purposes) with pattern 1, 6 surface, flush & semi flush type, without cover plate, with screw type terminals with marking 'X'. IS 3854:1997 RA 2002	Marking and visual Inspection	IS: 3854:1997 Cl. 8, Cl. 10	Up to 63A/250V
		Protection against Electric Shock	IS 3854:1997	0 to 100 V LC: 1V
		Terminal and screws	IS 3854:1997 Cl. 12	0 to 300mm, LC 0.01mm Up to 80N
		Insulation resistance Test	Cl. 16 IS 3854:1997	0 to 500 V LC:1V 2 - ∞ (mega ohm)
		Electric Strength test	Cl. 16 IS 3854:1997	Qualitative 3.7 kV LC: 0.1 kV
		Resistance to ageing & moisture	Cl. 15 IS 3854:1997	Qualitative, 0-250°C LC:1°C RH 0-96% LC:1%
	Temperature rise	Cl. 17 IS 3854:1997	0 to 400°C LC:1°C 0-50A LC:1A	

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Making and breaking capacity	Cl. 18 IS 3854:1997	Qualitative Pf up to 0.9 0 to 50A LC:0.1A 0 to 500V LC:1V 0 to 50Amp LC. 0.1A 0 to 50 A, LC 0.1A
		Normal operation	Cl. 19 IS 3854:1997	Qualitative 0 to 50A LC:0.1A 0 to 50A LC:0.1A 0 to 50A LC:0.1A 0 to 500V LC:1V 0-1-0 PF LC 0.001
		Resistance to Heat	Cl.-21 IS 3854:1997	Qualitative 0 to 250°C LC:1°C RH 0-95% LC:1%
		Ball pressure test	Cl.-20.1 IS 3854:1997	0 to 300°C, LC:1°C
		Creepage distance and clearance except transient voltage	Cl.-22 IS 3854:1997	0 to 300 mm LC:0.01mm
		Resistance to rusting	Cl.-25 IS 3854:1997	Qualitative 0 to 50°C, LC:1°C 50-(15°C), LC:0.1°C Chemical RH up to 95%
		Resistance to tracking	Cl.-23 IS 3854:1997	0-200 V, LC: 1 V
		Mechanical Strength Test	Cl. 20 IS:3854-1997	0 to 300mm, LC 0:01mm Up to 1.47N

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	Conduits for Electrical Installation IS 9537 (P-3): 1983 RA 2011	Dimensions	IS: 9537 (Pt-I)-1980 IS: 9537 (Pt-III)-1983 Cl.7	Gauge 16mm to 63 mm
		Construction	IS: 9537 (Pt-I)-1980 IS: 9537 (Pt-III)-1983, Cl.8	Visual
		Bending test	IS: 9537 (Pt-III)-1983 Cl.9.2	Qualitative 50 to (-)15°C LC:0.1°C
		Compression test	IS: 9537 (Pt-I)-1980 IS: 9537 (Pt-III)-1983 Cl.9.3	0-5000 N LC IN 0-300mm LC 0.01mm
		Impact test	IS: 9537 (Pt-I)-1980 IS: 9537 (P-III)-1983, Cl.9.4	Qualitative 50 to (-) 15°C LC:0.1°C
		Collapse Test	IS: 9537 (Pt-I)-1980 IS: 9537 (Pt-III)-1983, Cl.9.5	Qualitative 0-250 °C LC:1°C
		Resistance to Heat	IS: 9537 (P-III)-1983, Cl.10	0-250 °C LC: 1°C
		Resistance to Burning	IS: 9537 (Pt-I)-1980 IS: 9537 (Pt-III)-1983 Cl.11	Qualitative 0-600mm, LC:1mm 0-20 Min. , LC:0.01 Sec.
		Electrical Characteristic	IS: 9537 (Pt-I)-1980 IS: 9537 (Pt-III)-1983, Cl.12	-
	a)AC High Voltage	IS: 9537 (Pt-I)-1980 IS: 9537 (Pt-III)-1983	Qualitative 0-3kV LC 0.1 kV 0-100°C LC:0.1 °C	

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		b)Insulation Resistance	IS: 9537 (P-I)-1980 IS: 9537 (P-III)-1983	10 X 1000 MΩ X 10 ⁶ 0 to 100°C LC 0.1 °C
4.	Specification for winding wires for submersible motors Part: 1, Conductor data IS 8783(P-1)-1995	Dimension	IS 8783 (P-3) 1995	0 to 25mm, LC:0.001mm 0 to 300mm, LC:0.01mm
		Annealing test (elongation)	IS 8783 (P-3) 1995	0 to 400N, LC:0.1N 0 to 1000mm , LC:1mm
		Resistance test	IS 8783 (P-3) 1995	0 to 02μΩ to 11Ω, LC: 0.02 μΩ
		From conductor test	-	Qualitative test
		Joints in conductor	-	Qualitative test
		Conductor composition	-	Qualitative test
5.	Specification for winding wire for submersible motors.Part 4 Specification for individual wires. Section 1: HR PVC insulated wires.Section 2: Cross linked polyethylene insulated and polyamide jacketed wires. Section 3: Polyester and Polypropylene insulated winding wire IS 8783(P-4) Sec 1/Sec 2/Sec 3: 1995	Thickness of insulation	IS 8783(Pt-3) 1995	0 to 300mm, LC 0.01mm
		Application of insulation	IS 8783(Pt-3) 1995	Qualitative
		Colour	IS 8783(Pt-3) 1995	Qualitative
		Overall diameter	IS 8783(Pt-3) 1995	0 to 300mm, LC 0.01mm 0 to 25 mm, LC 0.001mm
		High voltage test	IS 8783(Pt-3) 1995	0 to 5 kV, LC:0.1kV

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6.	Specification for ceiling roses IS 371:1999 Edition 4.4 (2007-03)	Markings	Cl. 9 of IS 371-1999	Qualitative
		Dimensions	Cl. 10 of IS 371-1999	0 to 300mm, LC 0.01mm
		Provision of earthing	Cl. 12 of IS 371-1999	0 to 50A, LC 0.1A
		Terminals	Cl. 13 of IS 371-1999	0 to 120Ncm, LC 0.02Ncm 0 to 300mm, LC 0.01mm
		Construction	Cl. 14 of IS 371-1999	0 to 300mm, LC 0.01mm 0 to 250°C, LC 1°C 25N 0 to 15 Min, LC 0.01 Second
		Resistance for moisture	Cl. 15 of IS 371-1999	0 to 50°C, LC 0.1°C Upto 95%, LC 1%
		Insulation resistance test (After moisture test)	Cl. 15 of IS 371-1999	500 Vdc Upto 100 M ohm
		Electric strength test	Cl. 15 of IS 371-1999	0 to 5kV, LC 0.1kV 0 to 15 Min, LC 0.01 Second
	Flash test	Cl. 15 of IS 371-1999	0 to 5kV, LC 0.1kV 0 to 15 Min, LC 0.01 s	

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		Temperature rise test	Cl. 16 of IS 371-1999	0 to 30A, LC 0.1A Upto 300°C, LC 1°C
		Mechanical strength	Cl. 17 of IS 371-1999	150gm 0 to 300mm, LC 1mm
		Resistance to heat	Cl. 18 of IS 371-1999	Upto 300°C, LC 1°C
		Ball pressure test	Cl. 18 of IS 371-1999	Upto 300°C, LC 1°C
		Resistance to abnormal heat & fire	Cl. 19.9 of IS 371-1999	Upto 1000°C, LC 1°C 0 to 15 Min, LC 0.01 Second
		Resistance to Tracking	Cl. 19.9 of IS 371-1999	0 to 300V, LC 1V, 0 to 15 Min, LC 0.01s Ammonium chloride
		Screw, current carrying parts and connectors	Cl. 20 of IS 371-1999	0 to 120Ncm, LC 0.02Ncm
		Creepage distances and clearance	Cl. 21 of IS 371-1999	0 to 300mm, LC 0.01 mm
		Resistance to excessive residual stresses and to rusting	Cl. 22 of IS 371-1999	U to 300°C, LC 1°C Chemical

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IV. CONDUCTORS & CONDUCTING MATERIALS

1. Aluminium conductor overhead transmission purposes IS 398 (P-2):1996 Reaf.2002	Material		Cl. 6.1 of IS 398 (Pt-2):1996 Sr. No. 1 of Table 1 & 2	Qualitative 0 to 25 mm
	Diameter of Aluminium & Galvanized steel wire		Cl. 8.1.1 & Table 3 IS 398 (Pt-2):1996	LC: 0.001mm 0 to 300mm LC: 0 .01 mm
	Conductor resistance at 20°C		Sr. No. 4 of Table 1 & 2; Cl. 13.6 IS 398 (Pt-2)-1996	0.2 μΩ to 11Ω LC 0.02 mΩ
	Breaking load		Sr. No. 5 Table 1 & 2 IS 398 (P-2):1996	0 to 10000N LC: 1N 0-50000N LC: 2N
	Freedom from defects		Cl. 7.1 of IS 398 (Pt-2):1996	Qualitative
	Lay ratio test		Cl. 13.5 & Table 4 of IS 398 (Pt-2):1996, Cl. 13.8	0 to 600mm, LC 1mm
	Ductility Test		Cl.13.4 IS 398 (Pt-2):1996	Qualitative
	1. Torsion test		Cl. 13.4.1 IS 398 (Pt-2):1996	Qualitative 0 to 600 mm LC: 1mm
	2. Elongation		Cl. 13.4.2 IS 398 (P-2):1996	0 to 10000N LC: 1N 0 to 300mm, LC:0.01mm
	Wrapping test Aluminum wire		Cl . 13.5.1 & 13.5.2 IS 398 (Pt-2):1996	Qualitative

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		Galvanized steel wire Galvanizing test	Cl. 13.7.1 & 13.7.2 of IS 398 (Pt-2):1996	Electrical Balance 0.2 mg LC: 0.01 mg
2.	Aluminium Conductor For overhead Transmission purposes IS:398 (P-4):1994. Reaf.2004	Resistivity of conductor	Cl. 4.1	0.2 $\mu\Omega$ to 11 Ω LC 0.02 m Ω
		Material Diameter	Cl : 5.1 Cl. 5.1 & Table 1	0 to 25 mm LC:0.001mm 0 to 300mm LC:0.01mm
		Breaking Load	Cl. 5.1 & Table-1 & Cl.12.2	0 to 10000N LC:1N 0 to 50000N LC: 2N
		Elongation	Cl:12.3	0 to 10000N LC:1N 0 to 50000N LC: 2N
		Resistance test	Cl. 5.1 & Table-1 & Cl. 12.1.1 to Cl. 12.1.3 & Cl. 12.4	0.2 $\mu\Omega$ to 11 Ω LC 0.02 m Ω
		Freedom from defects	Cl:6.1	Qualitative
		Standard size Wire Standard Conductor	Cl.: 7.1.1 & 7.2.1 & Table 1&2	0 to 25 mm LC:0.001mm 0 to 300mm LC:0.01mm
		Stranding		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Actual Area	Cl.9.1 & Table 2	Qualitative 0 to 25mm LC: 0.001 0 to 300mm, LC:0.01mm
		Stranding & size	Cl.9.1 & Table 2	0 to 25mm LC: 0.001mm 0 to 300mm, LC: 0.01mm
		Approx. Overall dia	Cl.9.1 & Table 2	0 to 25mm LC: 0.001mm 0 to 300mm, LC: 0.01mm
		Resistance	Cl.9.1 & Table 2	0.2 $\mu\Omega$ to 11 Ω LC 0.002 m Ω
		Breaking Load	Cl.9.1 & Table 2	0 to 10000N LC: 1N 0 to 50000N, LC: 2N
		Lay ratio	Cl. 9.2 & Table 3	-
V.	DOMESTIC ELECTRICAL APPLIANCES			
1.	Water Purifier IS:14724-1999	Leakage Current test	IS:14724-1999, Amd. 1&2	300 μ A to 3Amp, LC 1 μ A
		High voltage test	IS:14724-1999, Amd. 1&2	Up to 2kV, LC 0.1kV
		Rate of flow	IS: 14724-1999, Amd. 1&2	Up to 4 lpm
		Leakage tightness	IS: 14724-1999, Amd. 1&2	0 to 10.6 kg/cm ²

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2.	Mineral filled sheathed heating element IS:4159-2002	Marking	Visual	0 to 230V ac Up to 6 KW
		Protection against electric shock	IS : 302 (P-1)-2008 Cl 8	0 to 75 V LC:1V
		Input test	IS : 302 (P-1)-2008 Cl 10	0 to 300V, LC:1V 0 to 5000 Watt, LC:0.1Watt
		Temperature rise	IS : 302 (Pt-1)-2008 Cl. 11	0 to 400 ⁰ C, LC:1 ⁰ C
		Electrical insulation & leakage current at operating temperature	IS : 302 (-1)-2008 Cl. 13	2 MΩ- LC 0.5 Megaohm 0 to 750 μA, LC: 1μA
		Moisture resistance	IS : 302 (P-1)-2008 Cl. 15	0 to 96%, LC:1% 0 to 199.9 ⁰ C, LC: 0.1 ⁰ C
		Insulation resistance and electric strength (After moisture test)	IS : 302 (Pt-1)-2008	2 mΩ to Infinity Qualitative, 0-3kV, LC:0.1 kV
		Endurance test	IS : 302 (Pt-1)-2008 Cl. 18	Qualitative 0 to 300 ⁰ C, LC:0.1 ⁰ C
		Abnormal operation	IS : 302 (Pt-1)-2008 Cl. 19	Qualitative 0-300V, LC:1Volt
	Stability & mechanical hazards	Cl. 20	Qualitative Mass :60gm, LC:1gm Force 20N	

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		Terminal for external conductor		Qualitative
		Provision for earthing		0 to 25 A, LC 0.1A 0 to 5V, LC 0.01V
		Resistance to heat, fire & tracking	IS : 302 (Pt-1)-2008 Cl. 30	0 to 1000 ⁰ C, LC:1 ⁰ C 0-500 ⁰ C, LC :1 ⁰ C
		Creepage distance & clearance except transient voltage	IS : 302 (Pt-1)-2008 Cl. 29	0 to 300mm, LC: 0.01mm, 0 to 25mm, LC:0.001mm
		Screws & connection	IS : 302 (Pt-1)-2008	0.1 to 1.5Nm LC:.0.1Nm
		Resistance to rusting	IS : 302 (Pt-1)-2008 Cl. 31	Qualitative 0 to 250 ⁰ C, LC:1 ⁰ C Chemical
		Finish	IS : 302 (Pt-1)-2008 Cl. 33	Visual
3.	Electric Iron IS:366-1991 Reaf.2003 IS: 302 (Part-2 Sec-3) -2007 Safety of household and similar electrical appliances.	Rating	-	0 to 230 V ac 0 to 1KW
		Classification	-	Class I & II
		Marking	-	0 to 230 V ac 0 to 1KW

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Measurement of heating of time	IS: 366-1991 Cl. 10	0 to 400 ⁰ C, LC: 1 ⁰ C Up to 20 min, LC 0.01s
		Measurement sole plate temperature	IS: 366-1991 Cl. 11	0 to 400 ⁰ C, LC: 1 ⁰ C
		Measurement of Temperature distribution	IS: 366-1991 Cl. 12	0 to 400 ⁰ C, LC: 1 ⁰ C
		Measurement of initial over swing	IS: 366-1991 Cl. 13	0 to 400 ⁰ C, LC: 1 ⁰ C
		Temperature heating up excess temperature	IS: 366-1991 Cl. 13	0 to 400 ⁰ C, LC: 1 ⁰ C
		Measurement of cycle fluctuation of temp	IS: 366-1991 Cl. 14	0 to 400 ⁰ C, LC: 1 ⁰ C
		Measurement of temperature drop under load	IS: 366-1991 Cl. 15	0 to 400 ⁰ C, LC: 1 ⁰ C
		Measurement of thermo static stability	IS: 366-1991 Cl. 16	0 to 400 ⁰ C, LC: 1 ⁰ C
		Endurance test Drop test	IS: 366-1991	0 to 400 ⁰ C, LC: 1 ⁰ C
		Finish		Visual
		Resistance to rusting	IS: 366-1991	0 to 250 ⁰ C, LC 1 ⁰ C
		Protection against access to live part	IS: 302-2-3 -2007 Cl. 8	0 to 75 V, LC:1V

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Power Input & current	IS: 302-2-3 -2007 Cl. 10	0 to 500V LC:1V 0 to 20A LC: 0.1A 0 to 5000W, LC: 0.1W
		Heating	IS: 302-2-3 -2007 Cl. 11	0 to 400 ⁰ C, LC: 1 ⁰ C
		leakage current & electric strength	IS: 302-2-3 -2007 Cl. 13	2 MΩ-Infinity 0 to 750 μA, LC: 1μA
		Moisture resistance	IS: 302-2-3 -2007 Cl. 15	0 to 95%, LC:1% 0 to 250 ⁰ C, LC:1 ⁰ C
		Leakage current & electric strength (after moisture test)	IS: 302-2-3 -2007 Cl. 16	2-Mega Ohm – Infinity 0-5KV, LC:0.1kV 0-5V, LC: 0.1V 0-30A. LC: 0.1A
		Earthing connection	IS: 302-2-3 -2007	0 to 5 V, LC:0.01V 0 to 30 Amp, LC: 0.1A
4.	Electric immersion water heater IS:302-2-201-2008 Safety of household and similar electrical appliances IS:368-1992 Reaf.2004	Rating		Up to 500V ac Up to 5kW
		Classification		Class I & II
		Marking		230V ac Up to 5kW Trade mark India
		Protection against access to live part	IS:302(Pt-1) -2008 IS :302-2-201-2008 Cl. 8	0 to 75 V LC:1V

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		Power Input & Current	IS:302(P-1) -2008 IS :302-2-201-2008 Cl. 10	0 to 5000Watt, LC: 0.1 Watt 0 to 230V, LC 1V 0 to 30A, LC 0.1A
		Heating	IS:302(Pt-1) -2008 IS :302-2-201-2008 Cl. 11	0 to 400V, LC:1V
		leakage current and electric strength at operating temperature	IS:302(Pt-1) -2008 IS :302-2-201-2008 Cl. 13	0 to 750μA, LC:1μA
		Moisture resistance	IS:302(Pt-1) -2008 IS :302-2-201-2008 Cl. 15	0 to 96%, LC:1% 0 to 250 ⁰ C, LC:1 ⁰ C
		Leakage current & electric strength (after moisture test)	IS:302(Pt-1) -2008 IS :302-2-2008 Cl. 16	0 to 3kV, LC:0.1kV
		ECR	IS:302(Pt-1) -2008 IS :302-2-2008 Cl. 27	0 to 5V LC:0.01V 0 to 30A, LC:1A
		Overload protection	IS:302(Pt-1)-2008 IS :302-201-2008	Upto 6kW, LC 1W Upto 30A, LC 0.1A Upto 250V, LC 1 V
		Abnormal operation	IS:302(Pt-1)-2008 IS :302-201-2008 Cl. 19	Upto 6kW, LC 1W Upto 30A, LC 0.1A Upto 250V, LC 1 V
		Mechanical strength (Drop test)	IS:302(Pt-1)-2008 IS :302-2-201-2008 Cl. 21	20N

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		Construction	IS:302(Pt-2)-2008 IS :302-2-201-2008 Cl. 22	Visual
		Internal wiring	IS:302(P-2)-2008 IS :302-2-201-2008 Cl. 23	Visual
		Components	IS:302(Pt-2)-2008 Cl. 24 IS :302-2-201-2008	Upto 300 mm, LC 0.01 mm
		Terminal for external conductor	IS:302(Pt-2)-2008 IS :302-2-201-2008	Visual
		Provision for earthing	IS:302(Pt-2)-2008 IS :302-2-201-2008	Upto 30Amp, LC 1 A Upto 5V, LC 0.1V
		Screws and connection	IS:302(Pt-2)-2008 IS :302-2-201-2008 Cl. 28	0.1 to 1.5N/mm
		Creepage distance and clearness except transient voltage	IS:302(Pt-2)-2008 IS :302-2-201-2008	0 to 300mm, LC:0.01mm 0 to 25mm, LC:0.001mm
		Resistance to heat fire and tracking	IS:302(Pt-2)-2008 IS :302-2-201-2008 Cl. 30	0 to 1200 ⁰ C , LC: 1 ⁰ C
		Resistance for rusting	IS:302(P-2)-2008 IS :302-2-201-2008 Cl. 31	Qualitative `

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VI. LAMPS, LUMINARIES & ACCESSORIES

1.	Specification for bayonet lamp holders(for B-22d size only without threaded entry lamp holder) IS 1258: 2005	Rating	Cl. 6 of IS 1258-2005	Qualitative
		Classification	Cl. 7 of IS 1258-2005	Qualitative
		Markings	Cl. 8 of IS 1258-2005	Qualitative
		Checking of Dimensions	Cl. 9 of IS 1258-2005	Standard Gauge
		Protection against electric shock	Cl. 10 of IS 1258-2005	0 to 50V, LC 1V 5N
		Terminals	Cl. 11 of IS 1258-2005	0 to 300mm, LC 0.01mm 20N 0 to 15min, LC 0.01s
		Provision of earthing	Cl. 12 of IS 1258-2005	0 to 30A, LC 0.1A 0 to 500V LC 1V
		Construction Requirement	Cl. 13 of IS 1258-2005	0 to 5Nm, LC 0.1Nm
		Switched lampholder	Cl. 14 of IS 1258-2005	Qualitative
		Moisture resistance	Cl. 15 of IS 1258-2005	0 to 50°C, LC 0.1°C Up to 100%, LC 1%
	Insulation resistance (after moisture test)	Cl. 15 of IS 1258-2005	500V 1-infinity	

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Electric strength (after moisture test)	Cl. 15 of IS 1258-2005	0 to 5kV, LC 0.1kV
		Mechanical strength	Cl. 16 of IS 1258-2005	0 to 10Nm, LC 0.1Nm
		Screw, current carrying parts and connections	Cl. 17 of IS 1258-2005	0 to 120Ncm, LC 0.2Ncm
		Creepage distances and clearance	Cl. 18 of IS 1258-2005	0 to 300mm, LC 0.01mm
		General Resistance to heat	Cl. 19 of IS 1258-2005	Upto 400°C, LC 1°C 0 to 50A, LC 0.01A
		Resistance to heat	Cl. 20 of IS 1258-2005	Upto 300°C, LC 1°C 20N 0 to 300mm, LC 0.01mm
		Glow wire test	Cl. 20.3 of IS 1258-2005	Upto 1000°C, LC 1°C
		Tracking test	Cl. 20.4 of IS 1258-2005	0 to 500V, LC 1V 0 to 15min, LC 0.01 s

