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Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Electrical Testing**	**Issue Date**	**10.06.2015**
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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 AND ACCESSORIES**			
1.	**Power Cables with Extruded insulation and their Accessories for 6 kV to 30 kV**	Partial discharge Test	IEC 60502 (Part 2): 2014 Cl. 18	1 pC to 100000 pC, Sensitivity > 1 pC/ (±)1pC
	Above 30 kV to 150 kV		IEC 60840: 2011 Cl. 12	
	Test Requirements on Accessories for Cables with Rated Voltage from 6 kV to 30 kV		IEC 60502-4: 2010 (Table 5, 6 & 7)	
	XLPE Insulated PVC sheathed Cables For Working Voltages from 3.3 kV to 33 kV having low Emission of Smoke		IS 7098 (Part 2): 1985 Amd. 1 Amd. 2 Cl. 18 BS 6622: 2007 Cl. 15 BS 7835: 2007 Cl. 16	
	XLPE Insulated thermoplastic sheathed Cables For Working Voltages from 66 kV to 220 kV		IS 7098 (Part 3): 1993 Amd. 1, Amd. 2, Amd. 3 Cl. 19	
	PVC insulated (Heavy Duty) Electric Cables for Working Voltages from 3.3 kV to 11 kV		IS 1554 (Part 2): 1988 Amd. 1, Amd. 2, Amd. 3	
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 1998 Cl. 25	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Elastomer Insulated Cables for 3.3 kV to 33 kV	Partial discharge Test	IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 18	1 pC to 100000 pC, Sensitivity > 1pC/ +/-1pC
	Accessories for Extruded Power Cables for 3.3kV (UE) to 33 kV(E)		IS 13573 (Part 2) (Table 3, 4, 5) & (Part 3): 2011 Cl. 7	
	Transition Joints of Power Cables from 11 kV to 33 kV		IS 13705: 1993 (Table1)	
	Test porcedures and requirements for HV AC Cable terminations		IEEE Std-48: 2009 Cl. 8	
	Cable Joints for use with lam1nated Cable Rated 2.5 kV to 500 kV		IEEE Std- 404: 2012 Cl. 7	
	Power Cables and their Accessories for Rated Voltages above 150 kV to 500 kV		IEC 62067: 2011 Cl. 12	
	Test Methods for Partial Discharge		IS 10810 (Part 45): 84, IEC 60885-2	
	PVC insulated (Heavy Duty) Electric Cables for 3.3 kV to 11 kV		IS 1554 (Part 2): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 18	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power Cable Accessories with Nominal Voltage 3.3 kV to 30 kV	Partial discharge Test	VDE 0278 Part (1 to 5): 1998 (Table 3, 4 & 5)	1 pC to 100000 pC, Sensitivity > 1pC/ +/-1pC
	Power Cables with Rated Voltages from 3.6/6kV to 20.8/36kV		CENELEC HD 0278-629-1-Nov 2006 (Table 3,4 & 5)	
	Test Requirements on Accessories for Power Cables from 3.5/6kV to 20.8/36kV		CENELEC HD 0278-628-Nov 2006 (Table 3, 4 & 5)	
	Bushing for ac Voltages above 1kV		IS 2099: 1986 Amd. 1, Amd. 2 (Cl. 11.14)	
	Instrument Transformers		IS 11322: 1985 Cl. 5 IEC 61869-1: 2007 Cl. 7.3.2 IEC 61869-3: 2011Cl. 7.3.2	
	Capacitor Voltage Transformers		IEC 60099-4: 2014 Cl. 6.4	
	Metal Oxide Surge Arrestors for ac systems			
	Lightning Arresters for ac systems		IS 3070 (Part 3): 93 IEC 61869-2: 2012 Cl. 7.3.1 IEC 61869-5: 2011 Cl. 7.3.2	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	**Power Cables with Extruded insulation and their Accessories for Rated Voltages 6 kV to 30 kV**	Electrical Heat cycle Test / Load Cycle Test/ Water penetration Test/ Pre Qualifciation Test	IEC 60502 (Part 2): 2014 Cl. 18	Upto 600 kV, 2000 A
	Above 30 kV to 150 kV		IEC 60840: 2011Cl. 12	
	Power Cables and their Accessories for Rated Voltages above 150 kV to 500 kV		IEC 62067: 2011Cl. 12	
	Test Requirements on Accessories for Cables with Rated Voltage from 6 kV to 30 kV		IEC 60502-4: 2010 (Table 5,6 &7)	
	XLPE Insulated PVC sheathed Cables For Working Voltages from 3.3 kV 33 kV having low Emission of Smoke		IS 7098 (Part 2): 1985 Amd. 1, Amd. 2 Cl. 18 BS 6622: 2007 Cl. 15 BS 7835: 2007 Cl. 16	
	For Working Voltages from 66 kV to 220 kV		IS 7098 (Part 3): 1993, Amd. 1, Amd. 2, Amd. 3 Cl. 19	
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 1998 Cl. 25	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Elastomer Insulated Cables for Working Voltages from 3.3 kV to 33 kV	Electrical Heat cycle Test / Load Cycle Test/ Water penetration Test/ Pre Qualifciation Test	IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 18	Upto 600 kV, 2000 A
	Accessories for Extruded Power Cables- for Working Voltages for 1.1kV to 3.3 kV, from 3.3kV (UE) to 33 kV(E)		IS 13573 (Part 1) (Table 3,4,5), IS 13573 (Part 2) (Table 3, 4, 5), IS 13573 (Part 3): 2011 Cl. 9	
	Transition Joints of Power Cables from 11 kV to 33 kV		IS 13705: 1993 (Table1)	
	Heating cycle Test PVC insulated (Heavy Duty) Electric Cables for Working Voltages from 3.3 kV to 11 kV		IS 10810 (Part 49): 84 IS 1554 (Part 2): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 18	
	Power Cable Accessories with 3.3 kV to 30 kV		VDE 0278 Part (1 to 5): 1998 (Table 3, 4 & 5)	
	Accessories for Power Cables with Rated Voltages from 3.6/6kV to 20.8/36kV		CENELEC HD 0278-629-1-Nov 2006 (Table 3,4 5)	
	Accessories for Power Cables from 3.6/6kV to 20.8/36kV		CENELEC HD 0278-628-Nov 2006(Table 3,4,5)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Type Tests for joints for 600/1000 volts CNE Cable Systems	Electrical Heat cycle Test / Load Cycle Test/ Water penetration Test/ Pre Qualifciation Test	BS EN 50393: 2015, Cl. 8	Upto 600 kV, 2000 A
	Test porcedures and requirements for HV AC Cable terminations		IEEE Std-48: 2009Cl. 8	
	Cable Joints for use with laminated Cable Rated 2.5kV to 500 kV		IEEE Std- 404: 2012Cl. 7	
3.	**Power Cables with Extruded insulation and their accessories-Cables for Rated Voltages 1kV to 3 kV**	Conductor Resistance Test/Armur resistivity Test	IEC 60502 (Part 1): 2009 Cl. 16	1.0 μΩ to 100Ω (± 0.05 %)
	Cables for Rated Voltages from 6 kV to 30 kV		IEC 60502 (Part 2): 2012 Cl. 17	
	Cables for Rated Voltages from 30 kV to 150 kV		IEC 60840: 2011 Cl. 12	
	Power Cables and their Accessories for Rated Voltages above 150 kV to 500 kV		IEC 62067: 2011 Cl. 12	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	XLPE Insulated PVC sheathed Cables for Working Voltages upto 1.1 kV for Working Voltages from 3.3 kV to 33 kV with low emiision of Smoke XLPE	Conductor Resistance Test/Armur resistivity Test	IS 7098 (Part 1): 1988 Amd. 1 Amd. 2, Amd. 3 Cl. 15 IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 18, BS 6622: 2007 Cl. 17.3 BS 7835: 2007 Cl. 16	1.0 μΩ to 100Ω (± 0.05 %)
	XPLE Insulated thermoplastic sheathed Cables For Working Voltages from 66 kV to 220 kV		IS 7098 (Part 3): 1993, Amd. 1, Amd. 2, Amd. 3 Cl. 18	
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 1998 Cl. 25	
	Elastomer Insulated Cables for Working Voltages to and including 1100 V		IS 9968 (Part 1): 1988, Amd. 1, Amd. 2, Cl. 21	
	Elastomer Insulated Cables for Working Voltages from 3.3 kV to 33 kV	Conductor Resistance Test/Armur resistivity Test	IS 9968 (Part 1): 1988, Amd. 1 Amd. 2, Cl. 21	1.0 μΩ to 100 Ω
	Joints and Termination of Polymeric Cables for Working Voltages from 6.6 kV to 33 kV		IS 13573 (Part 2) (Table 3, 4, 5) & (Part 3): 2011 Cl. 4.1	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Transition Joints of Power Cables from 11 kV to 33 kV	Conductor Resistance Test/Armur resistivity Test	IS 13705: 1993 (Table1)	1.0 μΩ to 100 Ω
	Aerial Bunched Cables – for Working Voltages up to 1100 V		IS 14255: 1995, Amd. 1 Cl. 10	
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation		BS 5467: 2008 Cl. 14	
	PVC insulated non Armoured Cable of Voltage rating 450/750 V		BS 6004: 2012Cl. 7	
	Voltage rating 600/1000 V		BS 6231: 2006 Cl. 11	
	PVC insulated Cables for Working Voltages upto 1100 V		IS 694: 2010 Cl. 15	
	600/1000 V & 1900/3300 V armoured electric cables having thermosetting insulation with low Emission of Smoke and Corrosive Gases		BS 7846: 2009 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electric Cables- Thermosetting insulated non armoured cables for voltages upto 450/750 V and having low Emission of Smoke and Corrosive Gases	Conductor Resistance Test/ Armour Resistivity Test	BS 6724: 2008 Cl. 14	1.0 μΩ to100Ω (± 0.05 %)
	Conductor Resistance Test / Resistivity Test for Armour wires and strip		BS 7211: 2012 Cl. 12	
	PVC insulated (Heavy Duty) Electric Cables for Working Voltages upto 1100 V		IS 10810 (Part 5): 42: 1984 Amd. 1	
	From 3.3 kV to 11 kV		IS 1554 (Part 1): 1988, Amd. 1 to Amd. 5 Cl. 15	
	Conductors for insulated Cables & Flexible cords		IS 1554 (Part 2): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 18 IS 8130: 2013 BS 6360: 1991, Amd. 1, Amd. 2 IEC 60228: 2004	
	Paper Insulated Lead Sheathed Cables Rated Voltage upto 33 kV		IS 692: 1994 Cl. 24, BS 6480: 1988 Amd.1, Amd.2 Cl.19	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Polyvinyl Chloride Insulated Cables of Rated Voltages upto 450/750 V	Conductor Resistance Test/ Armour Resistivity Test	IEC 60227 (Part 1 to 6): 2007 Cl.12	1.0 μΩ to 100Ω (± 0.05 %)
	Rubber Insulated Cables of Rated Voltage upto 450/750V		IEC 60245 (Part 1 to 7): 2003 Amd. 1, Amd. 2 (Table 6, 8,10)	
4.	**Power Cables with Extruded insulation and their Accessories for Rated Voltages 6 kV to 3 kV**	Capacitance Measurement	IEC 60502 (Part 2): 2014 Cl. 18	10 pF to 1100 μF (±) 0.05 %
	Cables for Rated Voltages above 30 kV to 150 kV		IEC 60840: 2011 Cl. 12	
	XLPE Insulated PVC sheathed Cables For Working Voltages from 3.3 kV to 33 kV with Low emission of Smoke		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 18 BS 6622: 2007 Cl. 15 BS-7835: 2007 Cl. 16	
	XLPE Insulated thermoplastic sheathed Cables for Working Voltages from 66 kV to 220 kV		IS 7098 (Part 3): 1993, Amd. 1, Amd. 2,Amd. 3 Cl. 19	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power Cables with Extruded insulation and their Accessories for above 150 kV to 500 kV	Capacitance Measurement	IEC 62067: 2011 Cl. 12	10 pF to 1100 μF (±) 0.05 %
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 1998 Cl. 25 IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 18	
	Elastomer Insulated Cables for Working Voltages from 3.3 kV to 33 kV		IS 13705: 1993 (Table 1)	
	Transition Joints of Power Cables from 11 kV to 33 kV		IS 10810 (Part 48): 1984	
	Dielectric Power factor measurement as a function of Voltage and temperature **Instrument Transformer** **Capacitor Voltage Transformers**		IEC 61869-1: 2007 Cl. 7.4.3, IEC 61869-2: 2012 Cl. 7.4.3 IEC 61869-3: 2011 Cl. 7.4.3 IEC 61869-5: 2011 Cl. 7.4.3	
	PVC insulated (Heavy Duty) Electric Cables from 3.3 kV to 11 kV		IS 1554 (Part 2): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 18	
	Paper Insulated Lead Sheathed Cables for Rated Voltages to and including 33 kV		IS 692: 1994, Amd. 1, Amd. 2 Cl. 24 BS 6480: 1988, Amd. 1, Amd. 2 Cl. 19	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
5.	**Power Cables with extruded insulation and their Accessories for Rated Voltage 6kV to 30kV**	Tan Delta Measurement	IEC 60502 (Part 2): 2014 Cl. 18	0.00001 to 1.2 (absolute) $>2 \times 10^{-5}$
	Cables for Rated Voltages above 30kV to 150kV		IEC 60840: 2011 Cl. 12	
	XLPE Insulated PVC sheathed Cables For Working Voltages from 3.3kV to 33kV with Low emission of Smoke		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 (Cl. 18) BS 6622: 1999 Cl. 15 BS 7835: 2007 Cl. 16	
	XLPE Insulated thermoplastic sheathed Cables for Working Voltages from 66kV to 220 kV		IS 7098 (Part 3): 1993,Amd. 1, Amd. 2, Amd. 3 (Cl. 19)	
	Power Cables and their Accessories for Rated Voltages above 150kV to 500 kV		IEC 62067: 2011 Cl. 12	
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 1998 Cl. 25	
	Elastomer Insulated Cables for Working Voltages from 3.3 kV to 33 kV		IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 18	
	Transition Joints of Power Cables from 11 kV to and including 33 kV		IS 13705: 1993 (Table 1)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Test Methods for Dielectric Power Factor Measurement as a function of Voltage and Temperature	Tan Delta Measurement	IS 10810 (Part 48): 1984	0.00001 to 1.2 (absolute) $>2 \times 10^{-5}$
	PVC insulated (Heavy Duty) Electric Cables from 3.3 kV to 11 kV		IS 1554 (Part 2): 1988 Amd. 1, Amd. 2, Amd. 3 Cl. 18	
	Paper Insulated Lead Sheathed Cables for Rated Voltage upto 33 kV		IS 692: 1994, Amd. 1, Amd. 2 Cl. 24 BS 6480: 1988, Amd. 1, Amd. 2 Cl. 19	
	Instrument Transformer Capacitor Voltage Transformers		IEC 61869-1: 2007 Cl. 7.4.3 IEC 61869-2: 2012 Cl. 7.4.3 IEC 61869-3: 2011 Cl. 7.4.3 IEC 61869-5: 2011 Cl. 7.4.3	
6.	**Joints and Termination of Polymeric Cables for Working Voltages from 6.6 kV to 33 kV**	DC withstand Test	IS 13573 (Part 2) (Table 3, 4, 5) & IS 13573 (Part 3): 2011 Cl. 5	Upto 200 kV
	Transition Joints of Power Cables from 11 kV to 33 kV		IS 13705: 1993 (Table 1)	
	PVC insulated (Heavy Duty) Electric		IS 1554 (Part 1): 1988, Amd. 1 to 5. Cl. 15	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Cables for Working Voltages upto 1100 V PVC insulated Cables for Working Voltages upto 1100 V	DC withstand Test	IS 694: 2010 Cl. 15, BS 6004: 2012 Cl. 7	Upto 200 kV
	Power Cable Accessories with Nominal Voltages upto 30 kV		VDE 0278 Part (1 to 5): 1998 (Table 3 , 4 & 5)	
	Accessories for Power Cables with Rated Voltages from 3.6/6kV to 20.8/36 kV		CENELEC HD 0278-629-1-Nov 2006(Table 3,4 & 5)	
	Accessories for Power Cables from 3.6/6kV to 20.8/36kV		CENELEC HD VDE 0278-628-Nov 2006 (Table 3,4 & 5)	
7.	**Power Cables with Extruded insulation and their Accessories for Rated Voltage 1kV to 3kV**	Power Frequency Withstand Test/ DiElectric strength	IEC 60502 (Part 1): 2009 Cl. 17	Upto 600 kV
	Cables for Rated Voltages from 6 kV to 30 kV		IEC 60502 (Part 2): 2014 Cl. 18	
	Cables for Rated Voltages above 30 kV to 150 kV		IEC 60840: 2011 Cl. 12	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Accessories For Cables with Rated Voltage from 6 kV to 30 kV	Power Frequency Withstand Test/ DiElectric strength	IEC 60502 (Part 4): 2010 (Table 5, 6 &7)	Upto 600 kV
	Power Cables and their Accessories for Rated Voltages above 150 kV to 500 kV		IEC 62067: 2011 Cl. 12 IS 7098 (Part 1): 1988 Amd. 1, Amd. 2, Amd. 3 Cl. 16	
	XLPE Insulated PVC sheathed Cables for Working upto 1.1 kV		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 18,	
	For Working from 3.3 kV to 33 kV with Low emissin of Smoke		BS 6622: 2007 Cl. 15 BS 7835: 2007 Cl. 16	
	XLPE Insulated thermoplastic sheathed Cables for Working from 66 kV to 220 kV		IS 7098 (Part 3): 1993, Amd. 1, Amd. 2, Amd. 3 Cl. 19	
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 1998 Cl. 25	
	Elastomer Insulated Cables for Working Voltages upto 1100 V		IS 9968 (Part 1): 1988 Amd. 1, Amd. 2 Cl. 21	
	Elastomer Insulated Cables for		IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 21	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	3.3 kV to 33 kV Aerial Bunched Cables – For Working Voltages upto 1100 V	Power Frequency Withstand Test/ DiElectric strength	IS 14255: 1995, Amd. 1 Cl. 10	Upto 600 kV
	Type Tests for joint for 600/1000 V CNE Cable Systems		BSEN 50393: 2015, Cl. 8	
	Power Cable Accessories with Nominal Voltages upto 30 kV		VDE 0278 (Part 1 to 5): 1998 (Table 3,4 & 5)	
	Accessories for Power Cables with Rated Voltages from 3.6/6kV to 20.8/36kV		CENELEC HD VDE 0278-629-1-Nov 2006 (Table 3,4 & 5)	
	Accessories for Power Cables from 3.6/6kV to 20.8/36kV		CENELEC HD VDE 0278-628-Nov 2006 (Table 3,4 & 5)	
	Tests on bushing for ac Voltages above 1000 V		IS 2099: 1986, Amd. 1, Amd. 2	
8.	**Accessories for Extruded Power Cables- for 1.1kV to 3.3 kV, from 3.3kV (UE) to 33 kV(E)**	Power Frequency Withstand Test/ DiElectric strength	IS 13573 (Part 1) : 2011 (Table 3, 4, 5) IS 13573 (Part 2) : 2011 (Table 3, 4, 5) IS 13573 (Part 3): 2011 Cl. 4.2 IS 13705: 1993 (Table 1)	Upto 600 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Transition Joints of Power Cables from 11 kV to 33 kV Test Methods for High Voltage Test **PVC insulated (Heavy Duty) Electric Cables for Working Voltages upto 1100 V** **From 3.3 kV to 11 kV** **PVC insulated Cables for Working upto 1100 V** **PVC insulated non Armoured Cable of 450/750 V** **Voltage rating 600/1000 V** **Paper Insulated Lead Sheathed Cables for Rated upto 33 kV**	Power Frequency Withstand Test/ DiElectric strength	IS 10810 (Part 45): 84 IS 1554 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3, Cl. 15 IS 1554 (Part 2): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 18 IS 694: 1990 Amd. 1 to Amd. 4 Cl. 15, BS 6004: 2012 Cl. 7 BS-6231: 2006 Cl. 11 IS 692: 1994, Amd. 1, Amd. 2 Cl. 24 BS 6480: 1988,Amd.2,Amd.2 Cl.19	Upto 600 kV
9.	**Polyvinyl Chloride Insulated Cables upto 450/750 V**	Power Frequency Withstand Test/ DiElectric strength	IEC 60227 (Part 1 to 6): 2007 Cl. 12 IEC 60245 (Part 1 to 5): 2003 (Table 6, 8,10)	Upto 600 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Rubber Insulated Cables of Rated Voltage upto 450/750 V	Power Frequency Withstand Test/ DiElectric strength	BS 5467: 2008 Cl. 14	Upto 600 kV
	600/1000 V and 1900/3300 V Armoured Electric Cables having Thermosetting Insulation		BS 7846: 2009 Cl. 14	
	Electric Cables-Thermosetting insulated Armoured Fire Resistiant Cable of 600/1000 V having low Emission of Smoke and Corrosive Gases		BS 6724: 2008 Cl. 14	
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation With low Emission of Smoke and Corrosive Gases		BS 7211: 2012 Cl. 12	
	Electric Cables-Thermosetting insulated non Armoured Cables			

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	upto 450/750 V and having low Emission of Smoke and Corrosive Gases			
	HV AC Cable terminations	Power Frequency Withstand Test/ DiElectric strength	IEEE Std-48: 2009 Cl. 8	Upto 600 kV
	Cable Joints for use with laminated Cable 2.5 kV to 500 kV		IEEE Std- 404: 2012 Cl. 7	
10.	**Power Cables with Extruded insulation and their Accessories for 1kV to 3kV**	Dimension of Armour Material	IEC 60502 (Part 1): 2009 Cl. 18	> 0.01 mm
	Cables for Rated 6 kV to 30 kV		IEC 60502 (Part 2): 2014 Cl. 18	
	XLPE Insulated PVC sheathed Cables for Voltages upto 1.1 kV		IS 7098 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 16	
	For working voltage 3.3 kV to 33 kV		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 18 BS 6622: 2007 Cl. 15	
	XLPE Insulated thermoplastic sheathed Cables from 66 kV to 220 kV		IS 7098 (Part 3): 1993, Amd. 1, Amd. 2, Amd. 3 Cl. 19	
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 98 Cl. 25	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Elastomer Insulated Cables for Working Voltages upto 1100 V	Dimension of Armour Material	IS 9968 (Part 1): 1988, Amd. 1, Amd. 2 Cl. 21	> 0.01 mm
	Elastomer Insulated Cables for Working Voltages from 3.3 kV to 33 kV		IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 21	
	Dimensions of Armouring Material		IS 10810 (Part 36): 1984	
	PVC insulated (Heavy Duty) Electric Cables for Working Voltages upto 1100 V		IS 1554 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 15	
	From 3.3 kV to 11 kV		IS 1554 (Part 2): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 18	
	Paper Insulated Lead Sheathed Cables for Rated upto 33 kV		IS 692: 1994, Amd. 1, Amd. 2 Cl. 24 BS 6480: 1988, Amd. 1, Amd. 2 Cl. 19	
	600/1000 V and 1900/3300 V Armoured Electric Cables having		BS 5467: 2008 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Thermosetting Insulation			
	Electric Cables- Thermosetting insulated Armoured Fire Resistiant Cable of 600/1000 V having low Emission of Smoke and Corrosive Gases when Affected by Fire	Dimension of Armour Material	BS 7846: 2009 Cl. 14	> 0.01 mm
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation with low Emission of Smoke and Corrosive Gases		BS 6724: 2008 Cl. 14	
11.	**Elastomer Insulated Flexible Cables for use in Mines**	Water Absorption Test (Electric)	IS 14494: 1998 Cl. 25	Upto 33 kV, 50 pF to 10,000 pF
	Elastomer Insulated Cables upto 1100 V		IS 9968 (Part 1): 1988, Amd. 1, Amd. 2 Cl. 21	
	Elastomer Insulated Cables from 3.3kV to 33kV		IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 21	
	Elastomer Insulation & Sheath of Electric Cables		IS 6380: 1984, Amd. 1	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Water Absorption (Electric)		IS 10810 (Part 28): 1984	
	Insulating & Sheathing Materials of Electric Cables		IEC 811-402: 2012	
12.	**Power Cables with Extruded insulation and their Accessories for 1 kV to 3 kV**	Water Absorption (Gravimetric)	IEC 60502 (Part 1): 2009 Cl. 18	> 0.1 mg
	Cables for Voltages from 6 kV to 30 kV		IEC 60502 (Part 2): 2014 Cl. 18	
	XLPE Insulated PVC sheathed Cables For upto 1.1 kV		IS 7098 (Part 1): 1988, Amd. 1 to Amd. 3 Cl. 16	
	From 3.3 kV to 33 kV with low Emission of Smoke		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 18 , BS 6622: 2007 Cl. 15 BS 7835: 2007 Cl. 16	
	Water Absorption (Gravimetric)		IS 10810 (Part 33): 1984, Amd. 1	
	Insulating and Sheathing Materials of Electric Cables		IEC 811-402: 2012	
	PVC insulated (Heavy Duty) Electric Cables for working voltage from 3.3 kV to 11 kV		IS 1554 (Part 2): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 18	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	600/1000 V & 1900/3300 V armoured Electric Cables having Thermosetting Insulation		BS 5467: 2008 Cl. 14	
	Electric Cables- Thermosetting insulated Armoured Fire Resistiant Cable of Rated 600/1000 V having low Emission of Smoke and Corrosive Gases	Water Absorption (Gravimetric)	BS 7846: 2009 Cl. 14	>0.1 mg
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation with low Emission of Smoke and Corrosive Gases		BS 6724: 2008 Cl. 14	
	Electric Cables- Thermosetting insulated non Armoured Cables for Voltages upto 450/750 V and having low Emission of Smoke and Corrosive Gases		BS 7211: 2012 Cl. 12	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
13.	**Power Cables with Extruded insulation and their Accessories for Rated Voltages 6 kV to 30 kV**	Impulse withstand Test/ Pre Qualification Test	IEC 60502 (Part 2): 2014 Cl. 17	Upto 500 kV, 15 kJ, 1.2/50 μS LI
	From 30kV to 150kV		IEC 60840: 2011 Cl. 12	
	Accessories For Cables with Rated 6 kV to 30 kV		IEC 60502-4: 2010 Cl. 18	
	XLPE Insulated PVC sheathed Cables For 3.3 kV to 33 kV with low Emission of Smoke		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2, Cl. 18, BS 6622: 2007 Cl. 15 BS-7835: 2007 Cl. 16	
	XLPE Insulated thermoplastic sheathed Cables for Working Voltages from 66 kV to 220 kV		IS 7098 (Part 3): 1993, Amd. 1, Amd. 2, Amd. 3 Cl. 19	
	For HV AC Cable terminations		IEEE Std-48: 2009 Cl. 8	
			IEEE Std- 404: 2012 Cl. 7	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Cable Joints for use with laminated Cable 2.5 kV to 500 kV		IS 13573 (Part 2) (Table 3, 4, 5) IS 13573 (Part 3): 2011 Cl. 6	
	Accessories for Extruded Power Cables for 3.3 kV (UE) to 33 kV(E) Transition Joints of Power Cables from 11 kV to 33 kV	Impulse withstand Test/ Pre Qualification Test	IS 13705: 1993 (Table 1)	Upto 500 kV, 15 kJ, 1.2/50 μS LI
	Impulse withstand		IS 10810 (Part 47): 1984 Amd. 1	
	PVC insulated (Heavy Duty) Electric Cables for 3.3 kV to 11 kV		IS 1554 (Part 2): 1988 Amd. 1, Amd. 2, Amd. 3 Cl. 18	
	Power Cable Accessories with Nominal Voltages Upto 30 kV		VDE 0278 (Part 1 to 5): 1991 (Table 3,4 & 5)	
	Accessories for Power Cables from 3.6/6kV to 20.8/36kV		CENELEC HD VDE 0278-629-1- Nov 2006 (Table 3,4 & 5)	
	Accessories for Power Cables From 3.6/6kV to 20.8/36kV		CENELEC HD VDE 0278-628- Nov 2006 (Table 3,4 & 5)	
14.	**Power Cables with Extruded insulation and their Accessories**	Wrapping Test/ Bending Test/ Winding Test/Torsion Test	IEC 60502 (Part 1): 2009 Cl. 18	> 5 mm dia

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Cables for 1kVto 3kV			
	Cables from rated voltage 6kV to 30kV		IEC 60502 (Part 2): 2014 Cl. 18	
	XLPE Insulated PVC sheathed Cables upto 1.1 kV		IS 7098 (Part 1): 1988,Amd. 1 Amd. 2, Amd. 3 Cl. 16	
	For Working Voltages from 3.3 kV to 33 kV with low Emission of Smoke	Wrapping Test/ Bending Test/ Winding Test/Torsion Test	IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 18, BS 6622: 2007 Cl. 15 BS-7835: 2007 Cl. 16	> 5 mm dia
	XLPE Insulated thermoplastic sheathed Cables from 66 kV to 220 kV		IS 7098 (Part 3): 1993, Amd. 1, Amd. 2, Amd. 3 Cl. 19 IEC 60840: 2011	
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 1998Cl. 25	
	Elastomer Insulated Cables for Working Voltages upto 1100 V		IS 9968 (Part 1): 1988, Amd. 1, Cl. 21, Amd. 2	
	Elastomer Insulated Cables for Working Voltages from 3.3 kV to 33 kV		IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 18	
	Aerial Bunched Cables – Voltages upto 1100 V		IS 14255: 1995 Amd. 1 Cl. 10	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	600/1000 V and 1900/3300 V Armoured Electric Cables Having Thermosetting insulation		BS 6346: 1997 BS 5467: 1997 Cl. 14	
	Aluminium conductor, Winding Test on Armour & Bending Test for Cables	Wrapping Test/ Bending Test/ Winding Test/Torsion Test	IS 10810 (Part 3,39 & 50): 1984	> 5 mm dia
	PVC insulated (Heavy Duty) Electric Cables for Working Voltages upto 1100 V		IS 1554 (Part 1): 1988, Amd. 1 to Amd. 5 Cl. 15	
	From 3.3 kV to 11 kV		IS 1554 (Part 2): 1988, Amd. 1 to Amd. 3 Cl. 18	
	Mild Steel wires, Formed wires and tapes for Armouring of Cables		IS 3975: 1999 Cl. 8	
	Paper Insulated Lead Sheathed Cables for Rated upto 33 kV		IS 692: 1994 Amd.1, Amd.2, Cl.24 BS 6480: 1988 Amd. 1, Amd. 2 Cl. 19	
	Electric Cables-Thermosetting insulated Armoured Fire Resistiant Cable		BS 7846: 2009 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	of Rated 600/1000 V having low Emission of Smoke and Corrosive Gases			
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation With low Emission of Smoke and Corrosive Gases	Wrapping Test/ Bending Test/ Winding Test/Torsion Test	BS 6724: 2008 Cl. 14	> 5 mm dia
	Electric Cables-Thermosetting insulated non Armoured Cables for Voltages upto 450/750 V having low Emission of Smoke and Corrive Gases		BS 7211: 2012 Cl. 12	
15.	**XLPE Insulated PVC sheathed Cables for Voltages upto 1.1 kV**	Galvanising Test (Uniformity of Zinc coating & Mass of Zinc coating)	IS 7098 (Part 1): 1988 Amd. 1 to Amd. 3 Cl. 16	>0.1 mg
	For Working Voltages from 3.3 kV to 33 kV		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 1 BS 6622: 2007 Cl. 15 IS 7098 (Part 3): 1993,	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	XLPE Insulated thermoplastic sheathed Cables For Working Voltages from 66 kV to 220 kV		Amd. 1 Amd. 2, Amd. 3 Cl. 19 IS 14494: 1998 Cl. 25	
	Elastomer Insulated Flexible Cables for use in Mines **Elastomer Insulated Cables upto1100V**	Galvanising Test (Uniformity of Zinc coating & Mass of Zinc coating)	IS 9968 (Part 1): 1988, Amd. 1, Amd. 2 Cl. 21	>0.1 mg
	Elastomer Insulated Cables for Working from 3.3 kV to 33 kV		IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 18	
	PVC insulated Cables for Electric Supply for Working upto 1100 V		IS 1554 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 15	
	From 3.3 kV to 11 kV		IS 1554 (Part 2): 1988, Amd. 1 to Amd. 3 Cl. 18	
	Mild Steel wires, Formed wires And tapes For Armouring of Cables		IS 3975: 1999 Cl. 9	
	Uniformity of Coating on Zinc coated Articles		IS 2633: 1986	
	Porcelain Post Insulators for		IS 2544: 1973 Amd. 1 to Amd. 4 Cl. 9.11	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	systems with nominal Voltage greater than 1000 V			
	Porcelain Insulators for Overhead lines with a nominal Voltage greater than 1000 V		IS 731: 1971 Amd. 1 to Amd. 6, Cl. 10.12	
	Mass of zinc coating on zinc coated iron and steel articles Specification for Hot Dipped Galvanised coating on round steel wires	Galvanising Test (Uniformity of Zinc coating & Mass of Zinc coating)	IS 6745: 1972 Amd. 1 to Amd. 4, IS 4826: 1979 Amd. 1, Amd. 2, Amd. 3	>0.1 mg >0.1 mg
	Electric Cables-Thermosetting insulated Armoured Fire Resistiant Cable of Rated 600/1000 V having low Emission of Smoke and Corrosive Gases		BS 7846: 2009 Cl. 14	
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation with low Emission of Smoke and Corrosive Gases		BS 6724: 2008 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electric Cables- Thermosetting insulated non Armoured Cables for Voltages upto 450/750 V having low Emission of Smoke and Corrive Gases		BS 7211: 2012 Cl. 12	
	Specification for surge Arrestors for alternating Current Systems	Galvanising Test (Uniformity of Zinc coating & Mass of Zinc coating)	IS 3070 (Part 1): 1985, Amd. 1	>0.1 mg >0.1 mg
	Uniformity & Mass of Zinc Coating on steel Armour		IS 10810 (Part 40 & 41): 1984	
	Paper Insulated Lead Sheathed Cables for rated voltage upto 33kV		BS 6480: 1988, Amd. 1 , Amd. 2 Cl. 19 IS 692: 1994 Amd. 1, Amd. 2 Cl. 24	
16.	**Power Cables with Extruded insulation and their Accessories Cable for 1kV to 3kV**	Thickness and dimension Test	IEC 60502 (Part 1): 2009 Cl. 18	> 0.001mm
	Cables from 6 kV to 30 kV rating		IEC 60502 (Part 2): 2014 Cl. 18	
	Cables from 30 kV to 150 kV rating		IEC 60840: 2011, Cl. 12	
	Cables from 150 kV to 500 kV rating		IEC 62067: 2011, Cl. 12	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	XLPE Insulated PVC sheathed Cables for Voltages upto 1.1 kV		IS 7098 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 16	
	Cables from 3.3 kV to 33 kV rating with low Emission of smoke		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 18, BS 6622: 2007 Cl. 15 BS 7835: 2007 Cl. 16	
	XLPE Insulated thermoplastic sheathed Cables For 66 kV to 220 kV	Thickness and dimension Test	IS 7098 (Part 3): 1993, Amd. 1 to Amd. 3 Cl. 19	> 0.001mm
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 88 Cl. 25	
	Elastomer Insulated Cables for Working Voltages upto 1100 V		IS 9968 (Part 1): 88 Amd. 1,Amd. 2 Cl. 21	
	PVC insulated (Heavy Duty) Electric Cables for Working Voltages upto 1100 V		IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 18	
	From 3.3 kV to 11 kV		IS 10810 (Part 6): 1984, IS 10810 (Part 34): 1984	
	PVC insulated Cables upto 1100 V		IEC 60811: 201: 202, 203: 2012	
			IS 1554 (Part 1): 1988, Amd. 1 to Amd. 5. Cl. 15	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Paper Insulated Lead Sheathed Cables for Rated upto 33 kV		IS 1554 (Part 2): 1988, Amd. 1 to Amd. 3 Cl. 18	
	Aerial Bunched Cables working Voltages upto 1100 V		IS 694: 2010 Cl. 15	
	PVC Insulated Cables of Voltages upto 450/750 V Rubber Insulated Cables of Voltage upto 450/750 V	Thickness and dimension Test	IS 692: 1994 Amd. 1, Amd. 2 Cl. 24 BS 6480: 1988,Amd.1,Amd.2 Cl.19	> 0.001mm
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation		IS 14255: 1995, Amd. 1 Cl. 10	
	Electric Cables-Thermosetting insulated Armoured Fire Resistiant Cable of 600/1000 V low Emission of Smoke and Corrosive Gases		IEC 60227-07 (Part 1 to 6) Cl. 12 IEC 60245-03 (Part 1 to 7) (Table 6, 8,10)	
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting		BS 5467: 2008 Cl. 14 BS 7846: 2009 Cl. 14 BS 6724: 2008 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	insulation with low Emission of Smoke and Corrosive Gases			
	Electric Cables-Thermosetting insulated non Armoured Cables upto 450/750 V low Emission of Smoke and Corrosive Gases		BS 7211: 2012 Cl. 12	
17.	**Power Cables with Extruded insulation and their Accessories Cables for Rated voltage 1kV to 3kV**	Insulation Resistance Test/ Volume resistivity/ IR Constant	IEC 60502 (Part 1): 2009 Cl. 17	1 kΩ to 10^{14} Ω (± 2 %)
	Cables from 6 kV to 30 kV rating		IEC 60502 (Part 2): 2014 Cl. 17	
	Cables from 30 kV to 150 kV rating		IEC 60840: 2011 Cl. 12	
	XLPE Insulated PVC sheathed Cables for Voltages upto 1.1 kV		IS 7098 (Part 1): 88, Amd. 1,Amd. 2 Cl. 16	
	For Working Voltages from 3.3 kV to 33 kV with low Emission of Smoke		IS 7098 (Part 2): 85, Amd. 1, Amd. 2 Cl. 18, BS 6622: 2007 Cl. 15 BS-7835: 2007 Cl. 16	
	XLPE Insulated thermoplastic		IS 7098 (Part 3): 1993, Amd. 1, Amd. 2 Cl. 19	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	sheathed Cables For Working Voltages from 66 kV to 220 kV			
	Elastomer Insulated Flexible Cables for use in Mines		IS 14494: 1998 Cl. 25	
	Elastomer Insulated Cables for Working upto 1100 V		IS 9968 (Part 1): 1988, Amd. 1, Amd. 2 Cl. 21	
	Elastomer Insulated Cables for Working from 3.3 kV to 33 kV	Insulation Resistance Test/ Volume resistivity/ IR Constant	IS 9968 (Part 2): 2002, Amd. 1, Amd. 2 Cl. 18	1 kΩ to 10^{14} Ω (± 2 %)
	Transition Joints of Power Cables from 11 kV to 33kV		IS 13705: 1993 (Table 1	
	Insulation Resistance		IS 10810 (Part 43): 1984	
	PVC insulated (Heavy Duty) Electric Cables upto 1100 V		IS 1554 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 15	
	From 3.3 kV to 11kV		IS 1554 (Part 2): 1988, Amd. 1, 3 Cl. 18	
	PVC insulated Cables upto 1100 V		IS 694: 1990, Amd. 1 to Amd. 4 Cl. 15	
	Type Tests for joints for 600/1000 V CNE Cable Systems		BS EN 50393: 2015 Cl. 8	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Paper Insulated Lead Sheathed Cables voltage upto 33 kV		IS 692: 1994, Amd. 2,3 Cl. 2, BS 6480: 1988, Amd. 1,2 Cl. 19	
	Aerial Bunched Cables for Working Voltages upto 1100 V		IS 14255: 1995 Cl. 10	
	Polyvinyl Chloride Insulated Cables upto 450/750 V		IEC 60227 (Part 1 to 6): 2007 Cl. 12	
	Rubber Insulated Cable upto 450/750 V	Insulation Resistance Test/ Volume resistivity/ IR Constant	IEC 60245 (Part 1 to 5): 2003 (Table 6, 8,10)	1 kΩ to 10^{14} Ω (± 2 %)
	600/100 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation		BS 5467: 2008 Cl. 14	
	Electric Cables-Thermosetting insulated Armoured Fire Resistiant Cable upto 600/1000 V having low Emission of Smoke and Corrosive Gases		BS 7846: 2009 Cl. 14	
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting		BS 6724: 2008 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	insulation With low Emission of Smoke and Corrosive Gases			
	Electric Cables-Thermosetting insulated non Armoured Cables for upto 450/750 V low Emission of Smoke and Corrive Gases		BS 7211: 2012 Cl. 12	
18.	**Power Cables with Extruded insulation and their Accessories Cables for Rated Voltages 1 kV to 3 kV**	Ageing in air oven/ageing in air bomb/Heat shock Test/ Shrinkage/Loss of Mass Test/ Hot set Test/HO Deformation Test/ Drainage Test/ Dripping Test/ Tests for resistance to Cracking/Pressure Test at high temperature/ Mineral Oil Immersion Test/ Carbon Black content	IEC 60502 (Part 1): 2009 Cl. 18	Upto 250°C
	Cables for Rated Voltages 6kV to 30kV		IEC 60502 (Part 2): 2014 Cl. 18	
	Cables for Rated Voltages above 30 kV to 150 kV		IEC 60840: 2011 Cl. 12	
	Cables and Accessories from 150 kV to 500 kV		IEC 62067: 2011 Cl. 12	
	XLPE Insulated PVC sheathed Cables for Voltages upto 1.1 kV		IS 7098 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 16	
	For Working Voltage from 3.3 kV to 33 kV		IS 7098 (Part 2): 85, Amd. 1,2, Cl. 18 BS 6622: 2007 Cl. 15	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	with low Emission of Smoke		BS-7835: 2007 Cl. 16	
	XLPE Insulated Cables for Working Voltages from 66 kV to 220 kV	Ageing in air oven/ageing in air bomb/Heat shock Test/ Shrinkage/ Loss of Mass Test/ Hot set Test/ HO Deformation Test/	IS 7098 (Part 3): 1993, Amd. 1, Amd. 2, Amd. 3 Cl. 19	Upto 250°C
	Polyvinyl Chloride Insulated Cables of Rated Voltages upto 450/750 V	Drainage Test/ Dripping Test/ Tests for resistance to Cracking/Pressure Test at high temperature/ Mineral Oil	IEC 60227 (Part 1 to 6): 2007 Cl. 12	
	600/1000 V and 1900/3300 V Armoured Electric Cables Having Thermosetting Insulation	Immersion Test/ Carbon Black content	BS 5467: 2008 Cl. 14	
	Elastomer Insulated Flexible Cables For use in mines		IS 14494: 1998 Cl. 25	
	Elastomer Insulated Cables for Working Voltages upto 1100 V		IS 9968 (Part 1): 1988, Amd. 1, Amd. 2 Cl. 21	
			IS 9968 (Part 2): 2002	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Elastomer Insulated Cables for Working Voltages from 3.3 kV to 33 kV		Amd. 1, Amd. 2 Cl. 18	
	Ageing/Heat Shock/ Shrinkage/loss of Mass/Hot Deformation Test		IS 10810 (Part 10,11,12,14,15,16 &30): 1984	
	Insulating & Sheathing Material of Electric Cables		IEC 60811-404,409,412,502,503, 508.509,507: 2012	
	PVC insulated (Heay Duty) Electric Cables for voltage upto 1100 V	Ageing in air oven/ageing in a bomb/Heat shock Test/Shrinkage/Loss of Mass Test/Hot set Test/HO Deformation Test/	IS 1554 (Part 1): 1988, Amd. 1 to Amd. 5 Cl. 15	-40°C to 250°C± 2°C 0 to 98% R.H ±3% R.H
	From 3.3 kV to 11 kV	Drainage Test/ Dripping Test/ Tests for resistance to Cracking/Pressure	IS 1554 (Part 2): 1988, Amd. 1 to 3 Cl. 18	
	PVC insulated Cables upto 1100 V	Test at high temperature/ Mineral Oil Immersion Test/Carbon Black content	IS 694: 2010 Cl. 15	
	PILC Cables for Rated upto 33 kV		IS692: 1994 Amd. 2,3 Cl. 24 BS 6480: 1988 Amd. 1,2, Cl. 19	
	Aerial Bunched Cables for working Voltages upto 1100 V		IS14255: 1995, Amd. 1 Cl. 10	
	Rubber insulated Cables of Rated Voltages upto 450/ 750 V		IEC 60245 (Part 1 to 7): 2003 (Table 6, 8,10)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electric Cables-Thermosetting insulated Armoured Fire Resistiant Cable of 600/1000 V low Emission of Smoke and Corrosive Gases		BS 7846: 2009 Cl. 14	
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation with low Emission of Smoke and Corrosive Gases	Ageing in air oven/ageing in a bomb/Heat shock Test/Shrinkage/Loss of Mass Test/Hot set Test/HO Deformation Test/ Drainage Test/ Dripping Test/ Tests for resistance to Cracking/Pressure Test at high temperature/ Mineral Oil Immersion Test/Carbon Black content	BS 6724: 2008 Cl. 14	(-)40 °C to 250 °C (±)2°C 0 to 98 % R.H (±)3 % R.H
	Electric Cables-Thermosetting insulated non Armoured Cables for Voltages upto 450/750 V having low Emission of Smoke and Corrive Gases		BS 7211: 2012 Cl. 12	
	PVC insulated non Armoured Cable of Voltage rating upto 450/750 V		BS 6004: 2012 Cl. 8	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	With Voltage rating 600/1000 V		BS 6231: 2006 Cl. 11	
19.	**Power Cables with Extruded insulation and their Accessories Cables for Rated Voltages 1 kV to 3 kV**	Mechanical Test Tensile Test/ /Breaking strength Test/ Tear resistance Test	IEC 60502 (Part 1): 2009 Cl. 18	Upto 500 N, ± 1%
	Cables for Rated 6 kV to 30 kV		IEC 60502 (Part 2): 2014 Cl. 18	
	Cables for Rated 30 kV to 150 kV		IEC 60840: 2011 Cl. 12	
	Power Cables and their Accessories for 150kV to 500 kV		IEC 62067: 2011 Cl. 12	
	XLPE Insulated PVC sheathed Cables for upto 1.1 kV For Working Voltages from 3.3 kV 33 kV		IS 7098 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 16 IS 7098 (Part 2): 1985, Amd. 1, Amd. 2, BS 6622: 2007 Cl. 15 IS 7098 (Part 3): 1993,	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	XLPE Insulated thermoplastic sheathed Cables For Working Voltages from 66 kV to 220 kV		Amd. 1, Amd. 2, Amd. 3 Cl. 19	
	Elastomer insulated Flexible Cables foruse in mines		IS 14494: 1998 Cl. 25	
	Elastomer Insulated Flexible Cables for Working Voltage upto 1100 V		IS 9968 (Part 1): 1988, Amd. 1, Amd. 2 Cl. 21	
	Elastomer Insulated Flexible Cables for Working Voltage from 3.3kV to 1100V	Mechanical Test Tensile Test/ Breaking strength Test/ Tear resistance Test	IS 9968 (Part 2): 2002 Amd. 1 , Amd. 2 Cl. 18	Upto 500 N ± 1%
	600/100 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation		BS 5467: 2008 Cl. 14	
	Test Methods for Tensile Test/Tear resistance Test/ Tensile strength of elastomeric Insulation and sheath/Breaking Strength Test for paper insulation		IS 10810 (Part 10,11,12,14,15, 16 & 30): 1984	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Common Test Methods for Insulating and Sheathing Materials of Electric Cables		IEC 60811-501: 2012	
	PVC insulated (Heavy Duty) Electric Cables for Working Voltages upto 1100 V		IS 1554 (Part 1): 1988 Amd. 1 Amd. 2, Amd. 3 Cl. 15	
	From 3.3 kV to 11 kV		IS 1554 (Part 2): 1988 Amd. 1, Amd. 2, Amd. 3 (Cl. 18)	
	PVC insulated Cables for Working Voltages upto 1100 V	Mechanical Test Tensile Test/ Breaking strength Test/ Tear resistance Test	IS 694: 1990,Amd.1 to Amd.4 Cl.15	Upto 500 N ± 1%
	Paper Insulated Lead Sheathed Cables for Rated upto 33 kV		IS 692: 1994 Am3 Cl. 24, BS 6480: 1988 Amd. 1, Amd. 2 Cl. 19	
	Aerial Bunched Cables For Working Voltages upto 1100 V	Mechanical Test Tensile Test/Breaking strength Test/Tear resistance Test/ elongation at break/Annealling Test	IS 14255: 1995 Cl. 10	Upto 250 mm
	Polyvinyl Chloride Insulated Cables of Rated upto 450/750 V		IEC 60227: 2007 (Part I to VI), Cl. 12	
	Rubber Insulated Cables of Rated upto 450/750 V		IEC 60245 (Part 1 to 7): 2003 (Table 6, 8,10)	
			BS 6004: 2012 Cl. 8	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	PVC insulated non Armoured Cable upto 450/750 V		BS 6231: 2006 Cl. 11	
	With Voltage rating 600/1000 V		BS 7846: 2009 Cl. 14	
	Electric Cables-Thermosetting insulated Armoured Fire Resistiant Cable of Rated 600/1000 V having low Emission of Smoke and Corrosive Gases 600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation with low Emission of Smoke and Corrosive Gases	Mechanical Test /Tensile Test//Breaking strength Test/Tear resistance Test/ Elongation at break/Annealling Test	BS 6724: 2008 Cl. 14	Upto 250 mm
	Electric Cables-Thermsetting insulated non armoured Cables upto 450/750 V low Emission of Smoke and Corrive Gases		BS 7211: 2012 Cl. 12	
20.	**Power Cable Accessories with Voltages Up to 30 kV**	Mechanical Test: Impact Test	VDE 0278 (Part 1 to 5): 1991 (Table 3,4 & 5)	Upto 10 kg

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Test Methods for Accessories for Power Cables with Rated Voltages from 3.6/6 kV to 20.8/36kV		CENELEC HD VDE 0278-629-1: 2006 (Table 3,4 & 5)	
	Test Requirements on Accessories for Power Cables from 3.6/6kV to 20.8/36kV		CENELEC HD VDE 0278-628: 2006 (Tab 3,4&5)	
	Joints & Termination of Polymeric Cables for Working Voltages from 6.6 kV to 33 kV **Transition Joints of Power Cables from 11 kV to 33 kV**	Mechanical Test: Impact Test	IS 13573 (Part 2) (Table 3, 4, 5) & (Part 3): 2011 IS 13705: 1993 (Table 1)	Upto 10 kg
	Type Tests for joints for 600/1000 V CNE Cable Systems		BS EN 50393: 2015 Cl. 8	
21.	**Power Cables with Extruded insulation and their accessories Cables for rated voltage 1 kV to 3 kV**	Mechanical Test Cold Impact Test / Cold Bend Test/ Conditioning Test/ cold elongation Test	IEC 60502 (Part 1): 2009 Cl. 18	Upto 10 kg >1 kg (-) 40 °C to 200 °C (±)2°C
	for Rated Voltages from 6 kV to 30 kV		IEC 60502 (Part 2): 2014 Cl. 18	
	for Voltages above 30 kV to 150 kV		IEC 60840: 2004 Cl. 19	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	XLPE Insulated PVC sheathed Cables For Voltages upto 1.1 kV		IS 7098 (Part 1): 1988, Amd. 1 to Amd. 3 Cl. 16	
	Working Voltages from 3.3 kV to 33 kV with low emiision of Smoke		IS 7098 (Part 2): 85, Amd. 1, Amd. 2 Cl. 18 BS 6622: 2007 Cl. 15 BS 7835: 2007 Cl. 16	
	XLPE Insulated thermoplastic sheathed Cables for Working Voltages from 66 kV to 220 kV		IS 7098 (Part 3): 1993 (RA 1998) Amd. 1 to 3 Cl. 19	
	PVC insulated Cables for Working Voltages upto 1100 V	Mechanical Test Cold Impact Test / Cold Bend Test/ Conditioning Test/ cold elongation Test	IS 1554 (Part 1): 1988 Amd. 1 to Amd. 5 Cl. 15	Upto 10 kg >1 kg (-) 40 °C to 200 °C (±) 2°C
	From 3.3 kV to 11 kV		IS 1554 (Part 2): 1988 Amd. 1 to Amd. 3 Cl. 18	
	PVC insulated Cables for Working Voltages upto 1100 V		IS 694: 2010 Cl. 15	
	Paper Insulated Lead Sheathed Cables for voltage upto 33 kV		BS 6480: 1988 Amd. 1, Amd. 2 Cl. 19	
	Test Methods for Cold Impact/Cold Bend Test		IS 10810 (Part 20 & 21): 1984/ IEC 60811-504, 505, 506: 2012	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Common Test Methods for Test at low temperature		IEC 60227: 2007, (Part I to VI) Cl. 12	
	PVC insulated Cables upto 450/750 V		IEC 60245: 2003 (part I to VI) (Table 6, 8,10)	
	Rubber Insulated Cables of Rated Voltages to and including 450/750 V		BS 6004: 2012 Cl. 8	
	PVC insulated non Armoured Cable upto 450/750 V	Mechanical Test	BS 6231: 2006 Cl. 11	Upto 10 kg >1 kg
	With Voltage rating 600/1000 V Electric Cables-Thermosetting insulated Armoured Fire Resistiant Cable of 600/1000V with low Emission of smoke and Corrosive Gases	Cold Impact Test / Cold Bend Test/ Conditioning Test/ cold elongation Test	BS 7846: 2009 Cl. 14	(-) 40 °C to 200 °C (±) 2°C
			BS 6724: 2008 Cl. 14	
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation with low			

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Emission of Smoke and Corrosive Gases			
	Electric Cables-Thermosetting insulated non Armoured Cables upto 450/750 V and having low Emission of Smoke and Corrive Gases		BS 7211: 2012 Cl. 12	
22.	**Power Cables with Extruded insulation and their Accessories -Cables for Rated 1 kV to 3 kV**	Thermal Stability Test for PVC Material	IEC 60502 (Part 1): 2009 Cl. 18	200 °C (±)0.5 °C
	Cables for Rated from 6 kV to 30 kV	Thermal Stability Test for PVC Material	IEC 60502 (Part 2): 2014 Cl. 18	200 °C (±)0.5 °C
	Cables for Rated 30 kV to 150 kV		IEC 60840: 2011 Cl. 12	
	XLPE Insulated PVC sheathed Cables For Voltages upto 1.1 kV		IS 7098 (Part 1): 1988, Amd. 1, Amd. 2, Amd. 3 Cl. 16	
	Working Voltages from 3.3 kV to 33 kV XLPE Insulated thermoplastic sheathed Cables For Working Voltages from 66 kV to 220 kV		IS 7098 (Part 2): 1985, Amd. 1, Amd. 2 Cl. 18 IS 7098 (Part 3): 1993, Amd. 1, Amd. 2, Amd. 3 Cl. 19	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Thermal Stability		IS 10810 (Part 60): 1988	
	Common tets Methods for Insulating and Sheathing Materials of Electric Cables		IEC 60811-405	
	PVC insulated (Heavy Duty) Electric Cables for Working Voltages upto 1100 V		IS 1554 (Part 1): 1988, Amd. 1 to 3 Cl. 15	
	From 3.3 kV to 11 kV		IS 1554 (Part 2): 1988, Amd. 1 to 3 Cl. 18	
	Polyvinyl Chloride Insulated Cables of Rated upto 450/750 V	Thermal Stability Test for PVC Material	IEC 60227 (Part 1 to 6): 2007 Cl. 12	200 °C (±)0.5 °C
	PVC insulated non Armoured Cable 450/750 V		BS 6004: 2012 Cl. 8	
	With Voltage rating 600/1000 V		BS 6231: 2006 Cl. 11	
23.	**Elastomer Insulated Cables for Working Voltages upto 1100 V**	Water Immersion Test/ Absence of faults in the insulation	IS 9968 (Part 1): 1988, Amd. 1,Amd. 2 Cl. 21	Upto 10kV ac and Upto 5kV dc
	PVC insulated (Heavy Duty) Electric		IS 1554 (Part 1): 1988, Amd. 1 to Amd. 5 Cl. 15	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Cables for Working Voltages upto 1100 V			
	PVC insulated Cables for Working Voltages to and including 1100 V		IS 694: 2010 Cl. 15	
	PVC insulated non Armoured Cable of rating upto 450/750 V		BS 6004: 2012 Cl. 7	
	With Voltage rating 600/1000 V		BS 6231: 2006 Cl. 11	
24.	**Elastomer Insulated Flexible Cables for use in Mines**	Fire resistance/ Flammability / Swedish Chimney Test/Bunched Cable Test/ Flame retardance Test for Bunched Cables/Circuit Inmtegrity	IS 14494: 1998 (RA 2003) Cl. 25	Flame Temp.: 800 °C Time: 60 s Length: 100 mm to 3.5 m
	Elastomer Insulated Cables for Working Voltages upto 1100 V		IS 9968 (Part 1): 1988, Amd. 1, Amd. 2 (RA 2005) Cl. 21	
	Elastomer Insulated Cables for Working Voltages from 3.3 kV to 11 kV		IS 9968 (Part 2): 2002, Amd. 1,Amd. 2 Cl. 18 IS 10810 (Part 53): 1984 (RA 2001)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Test Methods for Flammability Test		IS 10810 (Part 61): 1998 (RA 2005) IS 10810–62: 1993 (RA 2008) IEC 60332-1-1-04 IEC 60332-1-2-04 IEC 60332-1-3-04 IEC 60332-2-1-04 IEC 60332-2-2-04 IEC 60332-3-10-00, Amd. 1	
	Tests on Electric Cables under Fire conditions – Bunched wires or Cables	Fire resistance/ Flammability / Swedish Chimney Test/Bunched Cable Test/ Flame retardance Test for Bunched Cables/Circuit Inmtegrity	IEC 60332-3-21-00, Amd. 1 IEC 60332-3-22-00 IEC 60332-3-23-00, Amd. 1 IEC 60332-3-24-00, Amd. 1 IEC 60332-3-25-00, Amd. 1 IEEE 383: 2003	Flame Temp.: 800 °C Time: 60 s, Length: 100mm to 3.5m
	Standard Test Method for Rate of burning and /or extent of Burning of self supporting Plastics in a Horizontal position		ASTM-D-635: 2010 IS 11731 (Part 1 & 2): 1986 (RA 2007) IS 6746: 1994 (RA 2005) APPENDIX-N	
	Method of Test for Determination of Flammability of solid		UL 94: 2010, IEC 60695-11: 10 (2014)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrical Insulating Materials when Exposed to an Igniting source			
	Unsaturated polyester Resin systems		IEC 60331 (Part 11, 21, 23 & 25): 1999 (2004)	
	Tests for Electric Cables under Fire conditions- circuit integrity		IS 1554 (Part 1): 1988 (RA 2005) Amd. 1, 2, 3 Cl. 15	
	PVC insulated Heavy Duty Electric Cables upto 1100 V		IS 694: 2010, Cl. 15	
	PVC Cables to and including 1.1kV	Fire resistance/ Flammability / Swedish Chimney Test/Bunched Cable Test/ Flame retardance Test for Bunched Cables/Circuit Inmtegrity	IS 1554 (Part 2): 1988, Amd. 1 to 3 Cl. 18	Flame Temperature: 800 °C
	From 3.3 kV to 11kV XLPE Cables for Rated Voltages above 30 kV to 150 kV		IEC 60840: 2011 Cl. 12	
	Paper Insulated Lead Sheathed Cables for Rated upto 33 kV		IS 692: 1994, Amd.1, Amd.2 Cl. 24	
	XLPE Insulated PVC sheathed Cables for Voltages to and including 1.1kV for Working voltages from 3.3kV to and		BS 6480: 1988,Amd. 1 to 2 Cl. 19 IS 7098 (Part 1 to 88), Amd. 1, Amd. 2 Cl. 16 IS 7098 (Part 2):8 5, Amd.1 & 2 Cl. 18, BS 6622: 2007 Cl. 15	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	including 33kV with low emision of Smoke		BS 7835: 2007 Cl. 16	
	Power Cables with Extruded insulation & their Accessories for Rated Voltages 1kV to 3kV cables for Rated Voltages from 6kV to 30kV Cables for Rated Voltages above 30kV to 150kV Aerial bunched cables for Voltages upto 1.1kV Polyvinyl Chloride Insulated Cables of Rated upto 450/750 V		IEC 60502 (Part 1): 2009 Cl. 18 IEC 60502 (Part 2): 2014 Cl. 18 IS 7098 (Part 3): 1993, Amd. 1 to 3 Cl. 19 IS 14255: 1995, Amd.1: 2005 Cl. 10 IEC 60227-93 (Part 1 to 6) Cl. 12	
	Electric Cable – Single core PVC insulated flxible Cables of Rated 600/ 1000 V	Fire resistance/ Flammability / Swedish Chimney Test/Bunched Cable Test/ Flame retardance Test for Bunched Cables/Circuit Inmtegrity	BS 6004: 2012 Cl. 8	Flame Temperature: 800 °C
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation		BS 6231: 2006 Cl. 11	
	Armoured Cables with thermoseting insulation for rated Voltages 3.8/6.6 kV to		BS 5467: 1997 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	19/33 kV with low Emission of Smoke and Corrosive Gases			
	600/1000 V & 1900/3300 V Armoured Electric Cables having Thermosetting insulation & low Emission of Smoke & Corrosive Gases		BS 7835: 2007 Cl. 16 BS 6724: 1997 Cl. 14	
	Electric Cables – Thermosetting insulated, Armoured, Fire-resistant Cables of Rated Voltage 600/1000 V having low Emission of Smoke and Corrosive Gases	Fire resistance/ Flammability / Swedish Chimney Test/Bunched Cable Test/ Flame retardance Test for Bunched Cables/Circuit Inmtegrity	BS 7846: 2009 Cl. 14	
	Electric Cables – Thermosetting insulatd non-Armoured Cables for Voltages to and including 450/750 V, and having low		BS 7211: 2012 Cl. 12	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Emission of Smoke and Corrosive Gases			
25.	**Determination of Toxicity Index of the products of combustion from small spcimens of Materials**	Toxicity Index Test	NCD 1409 NES 713: 2006	Flame Temperature: 1200 °C Air Flow: 26l/m Methane: 7l/m Mass: 1g
26.	**Measurement of Smoke Density of Electric Cables burning under defined conditions- Test Apparatus**	Smoke Density Test	IEC 61034-1: 2005	Light Transmittance: 0 to 100 %, accuracy ± 0.5%
	Test procedure and requirements Test for Density of Smoke from the burning or decomposition of plastics	Smoke Density Test	IEC 61034-2: 2005 ASTM D 2843: 2010	Light Transmittance: 0 to 100 %, Accuracy (±)0.5 %
	Armoured Cables with thermoseting insulation for rated 3.8/6.6 kV to 19/33 kV having low Emission of Smoke and Corrosive Gases		BS 7835: 2007 Cl. 16 BS 6724: 1997 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	600/1000 V and 1900/3300 V Armoured Electric Cables having Thermosetting insulation and low Emission of Smoke and Corrosive Gases			
	Electric Cables – Thermosetting insulated, Armoured, Fire-resistant Cables of Rated 600/1000 V having low Emission of Smoke and Corrosive Gases		BS 7846: 2009 Cl. 14	
	Electric Cables – Thermosetting insulatd non-Armoured Cables for Voltages upto 450/750 V and having low Emission of Smoke and Corrosive Gases	Smoke Density Test	BS 7211: 2012 Cl. 12	Light Transmittance: 0 to 100 %, Accuracy (±)0.5 %
27.	**Minimum Oxygen concentration to support candle like combustion of plastics**	Oxygen Index Test & Temperature Index Test	ASTM 2863: 2012 IS 10810 (Part 64): 2003 (RA 2008) IS 10810 (Part 58): 1998	2.1 % to 100 % accuracy (±)0.5 % Time: upto 3m , Length: upto 150 mm

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Test Methods for oxygen Index Test		(RA 2003)	
	Textiles-determination of flammabilty by Oxygen Index		IS 13501: 1992 (RA 2003)	
	Determination of Oxygen Index		NCD-1410	
28.	**Determination of the amount of halogen acid evolved during combustion of polymeric Materials taken from Cables**	Halogen Acid Test	IEC 60754-1: 1994,	Furnace Temp.: 800 °C (±)10 °C Weight: 1 g
	Determination of acidity by measuring pH and Conductivity Armoured Cables with thermoseting insulation for rated 3.8/6.6 V to 19/33kV having low Emission of Smoke and Corrosive Gases	Halogen Acid Test	IEC 60754-2: 2011	Furnace Temp.: 800 °C (±)10 °C Weight: 1 g
			BS 7835: 2007 Cl. 16	
	600/1000 V and 1900/3300 V Armoured Electric Cables having Thermosetting		BS 6724, 1997 Cl. 14	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	insulation and low Emission of Smoke and Corrosive Gases			
	Electric Cables – Thermosetting insulated, Armoured, Fire-resistant Cables upto 600/1000V low Emission of smoke and Corrosive Gases		BS 7846: 2009 Cl. 14	
	Electric Cables – Thermosetting insulatd non armoured Cables for upto 450/750 V & having low Emission of Smoke & Corrosive Gases		BS 7211: 2012 Cl. 12	
II.	**POWER CAPACITORS**			
	Low Voltage Capacitors/ LT Capacitors			
1.	**Tubular Fluorescent, High Pressure mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits**	Capacitance Measurement	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 5.8 IEC 61048 (Edition 2.0): (2006 - 03) IEC 61049 (Edition 1.0) (1991 - 03) Cl. 6	Up to 100 kVar, 3 phase/ 10 pF to 1700μF
2.	**Capacitors for Electric fan motors**	Capacitance Measurement	IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2, Cl. 7.5	Up to 100 kVar, 3 phase/ 10 pF to 1700 μF
3.	**AC Motor Capacitors**	Capacitance Measurement	IS 2993: 1998 (RA 2003) IEC 60252: 1993 Cl. 2.9 IEC 60252-1 (Edition 2.1)	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			(2013 - 08) Cl. 5.9 IEC 60252-2 (Edition 2.1) (2013 - 08) Cl. 5.1.9	
4.	**Shunt Capacitors for the self-healing type for ac Power systems Rated upto 1000 V (Part 1) General performances Testing and rating – safety requirements – Guide for installation and Operation**	Capacitance Measurement	IS 13340 (Part 1): 2012/ IEC60831-1: 2002 Cl. 7 IS 13340 (Part 2): 2012/ IEC 60831-2: 1995 Cl. 7 IEC 60831-1: Sep (2002) (Edition 3.0) (2014-02) Cl. 7 IEC 60831-2: (2014-02) (Edition 3.0) Cl. 7 IS 13585 (Part 1): 2012/ IEC 60931-1: 1996 Cl. 7 IEC 60931-1: (1996-11), (Edition 2.0) Amd. 1, Cl. 7 IEC 60931-2 (Edition 2.0) (1995-12) Cl. 7.1 IEC 60931-3 (Edition 1.0) (1996-08) Cl. 7.1	Upto 100 kVar, 3 phase /10 pF to 1700 μF
	High Voltage Capacitors / HT Capacitors			
5.	**Shunt Capacitors for a.c Power systems having a Rated Voltage above 1000 V: Part 1 General performance Testing and rating safety requirements – Guide for installation and Operation**	Capacitance Measurement	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 Cl. 7 IEC 60871-1 (Edition 4.0): (2014-05) Cl. 7 IEC 60871-3 (Edition 1.0): (1996-03) Cl. 7 IEC 60871-4 (Edition 2.0): (2014-03) Cl. 5.3.2 IEEE Std.18: 2012 Cl. 7.2.2	Upto 3500 kVar, 16 kVac, 50 μF, 1 Phase or 3 Phase /10 pF to 110 μF
6.	**Shunt Capacitors for a.c Power systems**	Capacitance Measurement	IS 13925 (Part 2): 2002/ IEC60 871 – 2: 1999 Cl. 7	Upto 1000 kVar, 9 kVac, 50 μF, 1 Phase,

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	having a Rated Voltage above 1000 V – Part 2 Endurance Testing		IEC/ TS 60871-2 (Edition 2.0): (1999 - 06) Cl. 7	1000 kvar, 20 kVac, 8 μF, 1 Phase /10 pF to 110 μF
7.	**Series Capacitors for Power systems**	Capacitance Measurement	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.3 IEC 60143-2 (Edition 2.0): (2012 - 12) Cl. 5.3 IEC 60143-3 (Edition 1.0): (1998 - 01) Cl. 5.3 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Cl. 2.3	Upto 3500 kVar, 16 kVac, 50 μF, 1 Phase or 3 Phase /10 pF to 110 μF
8.	**Series Capacitors for Power systems – Cold duty Test-Part 1 General performance Testing and rating – safety requirements – Guide for installation**	Capacitance Measurement	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.3 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Cl. 2.3	Upto 1000kvar, 9kVac, 1 Phase /10 pF to 110μF
9.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**	Capacitance Measurement	IS 11548: 1986 (RA 2006) Cl. 9.2 (Edition 1.1)	0.1μF to 0.33μF / >10 pF
10.	**Coupling Capacitors, Capacitive Dividers and Grading Capacitors**	Capacitance Measurement	IS 9348: 1998 (RA 2004)/ IEC 60358: 1990, Rev.1.0, Cl. 7 IEC 60358 (Edition 2.0): (1990 - 05) Cl. 7 IEC 62146-1 Cl. 8.4.2	10 pF to 1μF />10 pF
	Low Voltage Capacitors/LT Capacitors			
11.	**Tubular Fluorescent, High Pressure**	Tan delta Measurement	IS 1569: 1976 (RA 2006) Cl. 5.8 (Edition 2.1)	0.00001 to 1.2 (absolute)/ >2x 10^{-5}

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits		IEC 61048 (Edition 2.0): (2006-03) IEC 61049 (Edition 1.0): (1991 - 03) Cl. 6	
12.	**Capacitors for Electric fan motors**	Tan delta Measurement	IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2,Cl. 7.6	0.00001 to 1.2 (absolute)/ >2x 10^{-5}
13.	**AC Motor Capacitors (Sec ond revision)**	Tan delta Measurement	IS 2993: 1998 (RA 2003) IEC 60252: 1993 Cl. 2.5 IEC 60252-1 (Edition 2.1): (2013 - 08) Cl. 5.5 IEC 60252-2 (Edition 2.1): (2013 - 08) Cl. 5.1.5	0.00001 to 1.2 (absolute)/ >2x 10^{-5}
14.	**Shunt capcitors for the Self-healing type for ac Power systems having a Rated Voltage upto 1000 V Part 1-General performances Testing and rating – safety requirements – Guide for installation and Operation**	Tan delta Measurement	IS 13340 (Part 1): 2012/ IEC 60831-1: 2002 Cl. 8 IS 13340 (Part 2): 2012/ IEC 60831-2: 1995 Cl. 8 IEC 60831-1 (Edition 3.0): (2014 - 02) Amd. 1 Cl. 8 IEC 60831-2 (Edition 3.0) (2014 - 02) Cl. 8	0.00001 to 1.2 (absolute)/ >2x 10^{-5}
15.	**Shunt Capacitors of non self healing type**	Tan delta Measurement	IS 13585 (Part 1): 2012/ IEC 60931-1: 1996 Cl. 8	0.00001 to 1.2 (absolute)/ >2x 10^{-5}

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	for ac Power systems having a Rated Voltage upto 1000 V Part 1 General – performance,- Guide for installation and Operation		IEC 60931-1 (Edition 2.0) (1996 - 11), Amd. 1, Cl. 8 IEC 60931-2 (Edition 2.0) (1995 - 12) Cl. 8 IEC 60931-3 (Edition 1.0): (1996 - 08) Cl. 8	
	High Voltage Capacitors / HT Capacitors			
16.	**Shunt Capacitors for a.c Power system with above 1000 V Part 1-General performances Testing and rating, safety requirements**	Tan delta Measurement	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 Cl. 8 IEC 60871-1 (Edition 4.0): (2014 - 05) Cl. 8 IEC 60871-4 (Edition 2.0): (2014 - 03) Cl. 5.3.2 IEE E Std.18: 2012 Cl. 7.2.5	0.00001 to 1.2 (absolute)/ $>2x\ 10^{-5}$
17.	**Shunt Capacitors for a.c Power systems having voltage above 1000 V: (Part 2) Endurance Testing**	Tan delta Measurement	IS 13925 (Part 2): 2002/ IEC60 871 – 2: 1999 Cl. 8 IEC / TS 60871-2 (Edition 2.0): (1999 – 06) Cl. 8	0.00001 to 1.2 (absolute)/ $>2 \times 10^{-5}$
18.	**Series Capacitors for Power systems**	Tan delta Measurement	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.4 IEC 60143-3 (Edition 1.0): (1998 - 01) Cl. 5.4 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0 Cl. 2.4	0.00001 to 1.2 (absolute)/ $>2 \times 10^{-5}$
19.	**Series Capacitors for Power systems – Cold duty Test Part 1-General performance Testing and rating – safety requirements**	Tan delta Measurement	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.4 IS 9835(Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0 Cl. 2.4	0.00001 to 1.2 (absolute)/ $>2 \times 10^{-5}$

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
20.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**	Tan delta Measurement	IS 11548 : 1986 (RA 2006) (Edition 1.1) Cl. 9.4	0.00001 to 1.2 (absolute)/ >2 x 10^{-5}
21.	**Coupling Capacitors. Capacitive Dividers and Grading Capacitors**	Tan delta Measurement	IS 9348: 1998 (RA 2004)/ IEC 60358: 1990 Rev.1.0, IEC 60358 (Edition 2.0): (1990 – 05) Cl. 8 IEC 62146-1 Cl. 8.4.3	0.00001 to 1.2 (absolute)/ >2 x 10^{-5}
	Low Voltage Capacitors/ LT Capacitors			
22.	**Tubular Fluorescent, High Pressure mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits**	Power Frequency withstand Test/ DC Withstand / DiElectric strength/ Voltage Test Between terminals and Container/ Short time over Voltage Test between terminal to terminal and terminal to case	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 5.7 IEC 61048 (Edition 2.0): (2006 - 03) Cl. 13 IEC 61049 (Edition 1.0): (1991 - 03) Cl. 8.3	Upto 100 kVar, 3 phase/10 pF to 1700μF Upto 2.5 kV ac & upto 5 kV dc
23.	**Capacitors for Electric fan motors**		IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2, Cl. 7.4	Upto 100 kVar, 3 phase/10 pF to 1700μF Upto 2.5kV ac & upto 5kV dc

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
24.	**AC Motor Capacitors (Sec ond revision)**		IS 2993: 1998 (RA 2003) / IEC 60252: 1993 Cl. 2.7 & Cl. 2.8 IEC 60252-1 (Edition 2.1): (2013 - 08) Cl. 5.7 & Cl. 5.8 IEC 60252-2 (Edition 2.1) (2013 - 08) Cl. 5.1.7 & Cl. 5.1.8	Upto 100 kVar, 3 phase/10 pF to 1700μF Upto 2.5kV ac & Upto 5kV dc
	Low Voltage Capacitors/ LT Capacitors			
25.	**Shunt Capacitors for the self-healing type for ac Power systems having upto 1000 V. Part 1 General performances Testing and rating**	Power Frequency withstand Test/ DC Withstand /DiElectric strength/ Voltage Test Between terminals and Container/ Short time over Voltage Test between terminal to terminal and terminal to case	IS 13340 (Part 1): 2012/ IEC 60831-1: 2002 Cl. 9 & Cl. 10 IS 13340 (Part 2): 2012/ IEC 60831-2: 1995 Cl. 10.1 IEC 60831-1 (Edition 3.0): (2014 - 02) Amd. 1 Cl. 9 & Cl. 10 IEC 60831-2 (Ed 3.0): (2014 - 02)	Upto 100 kVar, 3 Phase /10 pF to 1700μF Upto 2.5kV ac & Upto 5kV dc
26.	**Shunt Capacitors for non self healing type for ac power systems having upto 1000 V Part 1-General Performance guide**	Power Frequency withstand Test/ DC Withstand /DiElectric strength/ Voltage Test Between terminals and Container/ Short time over Voltage Test between terminal to terminal and terminal to case	IS 13585 (Part 1): 2012/ IEC 60931-1: 1996 Cl. 9) & Cl. 10) IEC 60931-1 (Edition 2.0) (1996 - 11), Amd. 1, Cl. 9 & Cl. 10 IEC 60931-2 (Edition 2.0) (1995 - 12) Cl. 10 IEC 60931-3 (Edition 1.0) (1996 - 08) Cl. 9	Upto 100 kVar, 3 phase/10 pF to 1700μF Upto 2.5 kV ac & Upto 5 kV dc
	High Voltage Capacitors / HT Capacitors			
27.	**Shunt Capacitors for a.c Power systems having a Rated Voltage above 1000 V**	Power Frequency withstand Test/ DC Withstand /DiElectric strength/ Voltage Test Between terminals and Container/ Short	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 Cl. 9, Cl. 10 & Cl. 15 IEC 60871-1 (Edition 4.0):	Upto 3500 kVar, 16 kVac, 50 μF 1 Phase or 3 Phase/ 10 pF to 110μF Up to 70 kV ac &

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	: Part 1 General performances Testing and rating safety requirements	time over Voltage Test between terminal to terminal and terminal to case	(2014 - 05) Cl. 9, Cl. 10 & Cl. 15.1 IEC 60871-4 (Edition 2.0): (2014 - 03) Cl. 5.3.2 IEE Std.18: 2012 Cl. 7.2.1.1 & Cl. 7.2.1.2	Upto 150kV dc
28.	**Shunt Capacitors for a.c Power systems having a Rated Voltage above 1000 V : Part 2 Endurance Testing**	Power Frequency withstand Test/ DC Withstand /DiElectric strength/ Voltage Test Between terminals and Container/ Short time over Voltage Test between terminal to terminal and terminal to case	IS 13925 (Part 2): 2002/ IEC 60 871–2: 1999 Cl. 9 IEC /TS 60871-2 (Edition 2.0): (1999 – 06), Cl. 9	Upto 1000 kVar, 9 kVac, 50 μF, 1 Phase, 1000 kVar, 20 kVac, 8μF, 1 Phase/10 pF to 110 μF 70 kV ac & upto 150 kV dc
29.	**Series Capacitors for Power systems**	Power Frequency withstand Test/ DC Withstand /DiElectric strength/ Voltage Test Between terminals and Container/ Short time over Voltage Test between terminal to terminal and terminal to case	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.5 & Cl. 5.6 IEC 60143-2(Edition 2.0):(2012-12) IEC 60143-3 (Edition 1.0): (1998 - 01) Cl. 3.2.4 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992Rev.1.0 Cl. 2.5 & Cl. 2.6	Upto 1000 kVar, 9 kVac, 50 μF, 1 Phase, 1000 kVar, 20 kVac, 8μF, 1 Phase/10 pF to 110 μF 70 kV ac & upto 150 kV dc
30.	**Series Capacitors for Power systems – Cold duty Test**	Power Frequency withstand Test/ DC Withstand /DiElectric strength/ Voltage Test Between terminals and Container/ Short time over Voltage Test between terminal to terminal and terminal to case	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.5 & Cl. 5.6 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0 Cl. 2.5 & Cl. 2.6	Upto 1000 kVar, 9 kVac, 50 μF, 1 Phase, 1000 kVar, 20 kVac, 8μF, 1 Phase/10 pF to 110 μF 70 kV ac & upto 150 kV dc
31.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**	Power Frequency withstand Test/ DC Withstand /DiElectric strength/ Voltage Test Between terminals and Container/ Short time over Voltage Test between	IS 11548 : 1986 (RA 2006) Cl. 9.5 (Edition 1.1)	0.1 μF to 0.33 μF / >10 pF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		terminal to terminal and terminal to case		
32.	**Coupling Capacitors, Capacitive Dividers and Grading Capacitors**	Power Frequency withstand Test/ DC Withstand /DiElectric strength/ Voltage Test Between terminals and Container/ Short time over Voltage Test between terminal to terminal and terminal to case	IS 9348: 1998 (RA 2004)/ IEC 60358: 1990 Rev.1.0, IEC 60358: 1990 (Edition 2.0) (1990-05) Cl. 9.1 & Cl. 10 IEC 62146-1 Cl. 8.4.7	10 pF to 1 μF />10 pF
	Low Voltage Capacitors/ LT Capacitors			
33.	**Shunt Capacitors for the self-healing type for ac Power systems having a Rated Voltage to and including 1000 V. Part 1 General performances Testing and rating – safety requirements**	Reactive Output Test on Capacitors	IS 13340 (Part 1): 2012/ IEC60831-1: 2002 Cl. 7 IEC 60831-1 (Edition 3.0): (2014 - 02) Amd. 1 Cl. 7	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF
34.	**Shunt Capacitors of non self healing type for ac Power systems having a Rated Voltage to and including 1000 V Part 1 General – performance,- Guide for installation and Operation**	Reactive Output Test on Capacitors	IS 13585 (Part 1): 2012/ IEC 60931-1: 1996 Cl. 7 IEC 60931-1 (Edition 2.0): (1996 - 11), Amd. 1, Cl. 7	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF
	High Voltage Capacitors / HT Capacitors			

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
35.	**Shunt Capacitors for a.c Power systems having a Voltage above 1000 V : Part 1 General performance Testing and rating safety requirements – Guide for installation and Operation**	Reactive Output Test on Capacitors	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 Cl. 7 IEC 60871-1 (Edition 4.0): (2014 - 05) Cl. 7 IEEE Std.18: 2012 Cl. 7.2.2	Upto 3500 kvar, 16 kVac, 50 μF, 1 Phase or 3 Phase /10 pF to 110 μF
36.	**Series Capacitors for Power systems**	Reactive Output Test on Capacitors	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.3 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0 Cl. 2.3	Upto 3500 kVar, 16kVac, 50 μF, 1 Phase or 3 Phase /10 pF to 110 μF
37.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**		IS 11548: 1986 (RA 2006) (Edition 1.1), Cl. 9.2	0.1 μF to 0.33 μF />10 pF
	Low Voltage Capacitors/ LT Capacitors			
38.	**Tubular Fluorescent, High Pressure mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits**	Thermal Stability Test on Capacitors/ Thermal Cycling Test on Fluorescent & other Discharge Lamp circuits/ Determination of temperature co-efficient for capacitance/ Determination of temperature co-efficient for Tandelta	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 5.10 IEC 61048 (Edition 2.0) (2006 - 03), Amd. 1 IEC 61049 (Edition 1.0): (1991 - 03) Cl. 8	Upto 100 kvar, 3 phase/ 10 pF to 1700 μF
39.	**Shunt Capacitors for the self-healing type for ac Power systems having a Rated**		IS 13340: 2012 (RA 2008) Amd. 1 Amd. 2, Cl. 13 IEC 60831-1 (Edition 3.0): (2014 -02) Amd. 1 Cl. 13	Upto 100 kvar, 3 phase/ 10 pF to 1700 μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Voltage to and including 1000 V. Part 1 General performances Testing and rating – safety requirements			
40.	**Shunt Capacitors of non self healing type for ac Power systems having a Voltage upto 1000 V Part 1 General – performance,- Guide for installation and Operation**	Thermal Stability Test on Capacitors/ Thermal Cycling Test On Fluorescent & other Discharge Lamp circuits/ Determination of temperature co-efficient for capacitance/ Determination of temperature co-efficient for Tandelta	IS 13585 (Part 1): 2012/ IEC 60931-1: 1996 Cl. 13 IEC 60931-1 (Edition 2.0): (1996 - 11) , Amd. 1, Cl. 13	Upto 100 kvar, 3 phase/ 10 pF to 1700 μF
	High Voltage Capacitors / HT Capacitors			
41.	**Shunt Capacitors for a.c Power systems having a Rated Voltage above 1000 V : Part 1 General performances Testing and rating safety requirements**	Thermal Stability Test on Capacitors/ Thermal Cycling Test On Fluorescent & other Discharge Lamp circuits/ Determination of temperature co-efficient for capacitance/ Determination of temperature co-efficient for Tandelta	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 IEC 60871-1(Edition 4.0):(2014-05) IEEE Std.18: 2012	Upto 3500 kVar, 16 kVac, 50 μF, 1 Phase or 3 Phase / 10 pF to 110 μF
42.	**Series Capacitors for Power systems**		IEC 60143-1 (Edition 4.0): (2004 - 01)	Upto 3500 kVar, 16 kVac, 50 μF,

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0	1 Phase or 3 Phase/ 10 pF to 110μF
43.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**		IS 11548: 1986 (RA 2006) (Edition 1.1)	0.1 μF to 0.33 μF />10 pF
44.	**Coupling Capacitors, Capacitive Dividers and Grading capacitor**		IS 9348: 1998 (RA 2004)/ IEC 60358: 1990, Rev.1.0, IEC 60358: 1990 (Edition 2.0): (1990-05)	10 pF to 1 μF
	Low Voltage Capacitors/LT Capacitors			
45.	**Tubular Fluorescent, High Pressure mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits**	Efficiency discharge device Test on Capacitors/ Test of Discharge device/ Test on Internal discharge device/ Test of Internal discharge device/ Test for Internal discharge device/ Discharge resistor Test/ Voltage decay	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 5.9 IEC 61048 (Edition 2.0): (2006 - 03) Amd. 1 IEC 61049 (Edition 1.0): (1991 - 03)	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF
46.	**Shunt Capacitors for the self-healing type for ac Power systems having a Rated Voltage upto 1000 V Part 1 General performance Guide for installation and Operation**	Efficiency discharge device Test on Capacitors/ Test of Discharge device/ Test on Internal discharge device/ Test of Internal discharge device/ Test for Internal discharge device/ Discharge resistor Test/ Voltage decay	IS 13340 (Part 1): 2012/ IEC60831-1: 2002 Cl. 11 IEC 60831-1(Edition 3.0): (2014 – 02) Amd.1 Cl. 11	Upto 100 kVar, 3 phase/ 10 pF to 1700μF
47.	**Shunt Capacitors of non self healing type for ac Power systems**	Efficiency discharge device Test on Capacitors/ Test of	IS 13585 (Part 1): 2012/ IEC 60931-1: 1996 Cl. 11 IEC 60931-1 (Edition 2.0):	Upto 100 kVar, 3 phase/ 10 pF to 1700μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	having a Rated Voltage upto 1000 V Part 1 General performance Guide for installation and Operation	Discharge device/ Test on Internal discharge device/ Test of Internal discharge device/ Test for Internal discharge device/ Discharge resistor Test/ Voltage decay	(1996 - 11), Amd. 1, Cl. 11	
	High Voltage Capacitors / HT Capacitors			
48.	**Shunt Capacitors for a.c Power systems with above 1000 V: Part 1 General performances Testing and rating safety requirements – Guide for installation and Operation**	Efficiency discharge device Test on Capacitors/ Test of Discharge device/ Test on Internal discharge device/ Test of Internal discharge device/ Test for Internal discharge device/ Discharge resistor Test/ Voltage decay	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 Cl. 11 IEC 60871-1 (Edition 4.0): (2014 - 05) Cl. 11 IEEE Std.18: 2012 Cl. 7.2.4	Upto 3500 kVar, 16kVac, 50 μF, 1 Phase or 3 Phase /10 pF to 110μF
49.	**Series Capacitors for Power systems**		IEC 60143-1 (Edition 4.0): (2004 – 01) Cl. 5.7 IS 9835(Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0 Cl. 2.7	Upto 3500 kVar, 16 kVac, 50 μF, 1 Phase or 3 Phase/ 10 pF to 110μF
50.	**Capacitors for surge protection for use in Voltage system above 1000 V & to 45 kV**	Efficiency discharge device Test on Capacitors/ Test of Discharge device/ Test on Internal discharge device/ Test of Internal discharge device/ Test for Internal discharge device/ Discharge resistor Test/ Voltage decay	IS 11548: 1986 (RA 2006) (Edition 1.1) Cl. 9.8	0.1 μF to 0.33 μF />10 pF
	Low Voltage Capacitors/ LT Capacitors			
51.	**Tubular Fluorescent, High Pressure mercury and Low**	Sealing Test/Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 5.5 IEC 61048 (Edition 2.0):	Upto 100 kvar, 3 phase/ 10 pF to 1700 μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Pressure Sodium Vapour Discharge Lamp Circuits		(2006 - 03) , Amd. 1 Cl. 12 IEC 61049 (Edition 1.0): (1991 - 03)	
52.	**Capacitors for Electric fan motors (First Revision)**	Sealing Test/Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test	IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2, Cl. 7.12	Upto 100 kvar, 3 phase/ 10 pF to 1700 μF
53.	**AC Motor Capacitors (Sec ond revision)**	Sealing Test/Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test	IS 2993 : 1998 (RA 2003)/ IEC 60252: 1993 Cl. 2.12 IEC 60252-1 (Edition 2.1): (2013 - 08) Cl. 5.12 IEC 60252-2 (Edition 2.1): (2013 - 08) Cl. 5.1.12	Upto 100 kvar, 3 phase/ 10 pF to 1700 μF
54.	**Shunt Capacitors for the self-healing type for ac Power systems upto 1000 V. Part 1-General performance Testing and rating – safety requirements**	Sealing Test/Leakage Test/Heating Tests on Capacitors/ Leak Test/Oil leakage Test	IS 13340 (Part 1): 2012/ IEC 60831-1: 2002 Cl. 12 IS 13340 (Part 2): 2012/ IEC 60831-2: 1995 Cl. 12 IEC 60831-1 (Edition 3.0): (2014 - 02) Amd. 1 Cl. 12 IEC 60831-2 (Edition 3.0): (2014 – 02) Cl. 12	Upto 100 kvar, 3 phase/ 10 pF to 1700μF
55.	**Shunt Capacitors of non self healing type for ac Power systems with upto 1000 V Part 1 General – performance Guide for installation and Operation**	Sealing Test/Leakage Test/Heating Tests on Capacitors/ Leak Test/Oil leakage Test Sealing Test/Leakage Test/Heating Tests on Capacitors/ Leak Test/Oil leakage Test	IS 13585 (Part 1): 2012/ IEC 60931-1: 1996 Cl. 12 IEC 60931-1 (Edition 2.0): (1996 - 11) , Amd. 1, Cl. 12 IEC 60931-2 (Edition 2.0): (1995 - 12) Cl. 12	Upto 100 kvar, 3 phase/ 10 pF to 1700μF
	High Voltage Capacitors / HT Capacitors			

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
56.	**Shunt Capacitors for a.c Power systems with above 1000 V: Part 1 General performances Testing and rating safety requirements – Guide for installation and Operation**	Sealing Test/ Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test Sealing Test/ Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 Cl. 12 IEC 60871-1 (Edition 4.0): (2014 - 05) Cl. 12 IEEE Std. 18: 2012 Cl. 7.2.3	Upto 3500 kvar, 16 kVac, 50 μF, 1 Phase or 3 Phase /10 pF to 110 μF
57.	**Series Capacitors for Power systems**	Sealing Test/ Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test Sealing Test/ Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test	IEC 60143-1 (Edition 4.0): (2014 – 01) Cl. 5.8 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0 Cl. 2.8	Upto 3500 kvar, 16 kVac, 50μF, 1 Phase or 3 Phase /10 pF to 110 μF
58.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**	Sealing Test/ Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test Sealing Test/ Leakage Test/ Heating Tests on Capacitors/ Leak Test/ Oil leakage Test	IS 11548 : 1986 (RA 2006) (Edition 1.1), Cl. 9.9	0.1 μF to 0.33 μF />10 pF
	Low Voltage Capacitors/ LT Capacitors			
59.	**Shunt Capacitors for the self-healing type for ac Power systems having a Rated Voltage upto 1000 V. Part 1 General performances Testing and rating – safety requirements – Guide**	Short Circuit Discharge Test/ Destruction Test On Capacitors/ Discharge Test of Internal fuses/ Discharge Test on Internal fuses/ Discharge Test/ Fuse capability Tests for internally fused Capacitors/ Discharge current Test/ Disconnecting	IS 13340 (Part 1): 2012/ IEC 60831-1: 2002 Cl. 16 IEC 60831-1 (Edition 3.0) (2014 - 02) Amd. 1 Cl. 16	Upto 100 kVar, 3 phase/ 10 pF to 1700μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	for installation and Operation	Test on internal fuses		
60.	**Shunt Capacitors of non self healing type for ac Power systems having a Rated Voltage utpo 1000 V Part 1 General – performance,- Guide for installation and Operation**	Short Circuit Discharge Test/Destruction Test On Capacitors/Discharge Test of Internal fuses/ Discharge Test on Internal fuses/ Discharge Test/ Fuse capability Tests for internally fused Capacitors/ Discharge current Test/ Disconnecting Test on internal fuses	IS 1569 Cl. 5.14 IEC 61048 Cl. 17 IS 1709 Cl. 7.17 IS 2993 Cl. 2.16 IEC 60252-1 Cl. 5.16 IEC 60252-2 Cl. 5.1.16 IS 13585 (Part 1): 2012 , (RA 2004) Amd. 1 Cl. 16 IEC 60931-1 (Edition 2.0): (1996 – 11) , Amd. 1, Cl. 16 IEC 60931-3 (Edition 1.0): (1996 - 08) Cl. 5.3	Upto 100 kVar, 3 phase/ 10 pF to 1700μF
61.	**Shunt Capacitors for a.c Power systems having a Rated Voltage above 1000V: Part 1 General performances Testing and rating safety requirements – Guide for installation and Operation**	Short Circuit Discharge Test/Destruction Test On Capacitors/Discharge Test of Internal fuses/ Discharge Test on Internal fuses/Discharge Test/ Fuse capability Tests for internally fused Capacitors/ Discharge current Test/ Disconnecting Test on internal fuses	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 Cl. 17 IEC 60871-1 (Edition 4.0): (2014 - 05) Cl. 17 IEC 60871-4 (Edition 2.0): (2014 - 03) Cl. 5.1.1 & Cl. 5.3 IEEE Std. 18: 2012 Cl. 7.1.5 & 7.1.7	Upto 3500 kVar, 16 kVac, 50 μF, 1 Phase or 3 Phase /10 pF to 110μF
	High Voltaeg Capacitors/ HT Capacitors			
62.	**Series Capacitors for Power systems**	Short Circuit Discharge Test/Destruction Test On Capacitors/Discharge Test of Internal fuses/ Discharge Test on Internal fuses/Discharge	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.13 IS 9835 (Part 3): 2012/ IEC 60143-3: 1998 Cl. 3.1.2 & Cl. 3.2.3 IEC 60143-3 (Edition 1.0):	Upto 3500 kvar, 16 kVac, 50μF, 1 Phase or 3 Phase /10 pF to 110 μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Test/Fuse capability Tests for internally fused Capacitors/ Discharge current Test/ Disconnecting Test on internal fuses	(1998 - 01) Cl. 3.2.2 & Cl. 3.2.3) IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0 Cl. 2.13, Cl. 3.2.2 & 3.2.3	
63.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**		IS 11548 : 1986 (RA 2006) (Edition 1.1), Cl. 9.7	0.1μF to 0.33 μF />10 pF
	Low Voltage Capacitors/ LT Capacitors			
64.	**Electric fan motors**	Insulation Resistance Test	IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2, Cl. 7.3	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF
65.	**Tubular Fluorescent, High Pressure mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits**	Damp Heat Test	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 5.12 IEC 61048 (Edition 2.0): (2006 - 03) , Amd. 1. Cl. 14 IEC 61049 (Edition 1.0):(1991 - 03)	Upto 100 kVar, 3 Phase /10 pF to 1700 μF
66.	**Capacitors for Electric fan motors (first revision)**	Damp Heat Test	IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2, Cl. 7.15	Upto 100 kVar, 3 Phase /10 pF to 1700 μF
67.	**AC Motor Capacitors (Sec ond revision)**	Damp Heat Test	IS 2993: 1998 (RA 2003) IEC 60252: 1993 Cl. 2.14 IEC 60252-1 (Edition 2.1): (2013 - 08) Cl. 5.14 IEC 60252-2 (Edition 2.1): (2013 - 08) Cl. 5.14	Upto 100 kVar, 3 Phase /10 pF to 1700 μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
68.	**Tubular Fluorescent, High Pressure mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits**	Endurance Test	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 5.13 IEC 61048 (Edition 2.0): (2006 - 03), Amd. 1 IEC 61049 (Edition 1.0): (1991 - 03) Cl. 8	Upto 100 kVar,3 phase/ 10 pF to 1700 μF
69.	**Capacitors for Electric fan motors (first revision)**	Endurance Test	IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2, Cl. 7.16	Upto 100 kVar,3 phase/ 10 pF to 1700 μF
70.	**AC Motor Capacitors (Sec ond revision)**	Endurance Test	IS 2993 : 1998 (RA 2003) / IEC 60252: 1993 Cl. 2.13 IEC 60252-1 (Edition 2.0): (2013 - 08) Cl. 5.13 IEC 60252-2 (Edition 1.0): (2013 - 08) Cl. 5.1.13	Upto 100 kVar,3 phase/ 10 pF to 1700 μF
71.	**Shunt Capacitors for the self-healing type for ac Power systems with Voltage upto 1000 V. Part 1 General performance Testing and rating – safety requirements – Guide for installation and Operation**	Ageing/ Conditioning Tests	IS 13340 (Part 1): 2012/ IEC 60831-1: 2002 Cl. 17 IS 13340 (Part 2): 2012/ IEC 60831-2: 1995 Cl. 17 IEC 60831-1 (Edition 2.1): (2014 - 02), Amd. 1 Cl. 17 IEC 60831-2 (Edition 3.0): (2014 - 02) Cl. 17	Upto 100 kVar,3 phase/ 10 pF to 1700 μF
72.	**Shunt Capacitors of non self healing type for ac Power systems upto 1000 V Part 1 General – performance,- Guide**	Ageing/ Conditioning Tests	IEC 60931-1 (Edition 2.0): (1996 - 11) Amd. 1, Cl. 17 IEC 60931-2 (Edition 2.0): (1995 –12) Cl. 17	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	for installation and Operation			
73.	**Tubular Fluorescent, High Pressure mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits**	Mechanical Tests on Motor/fan/ Lighting Capacitors Robustness of termination Flexibility Test/ Soldering Test	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 3.3) IEC 61048 (Edition 2.0): (2006 - 03), Amd. 1 Cl. 7 & Cl. 15 IEC 61049 (Edition 1.0):(1991 - 03)	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF
74.	**Capacitors for Electric fan motors (first revision)**	Mechanical Tests on Motor/fan/ Lighting Capacitors Robustness of termination Flexibility Test/ Soldering Test	IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2, Cl. 7.7 to 7.11	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF
75.	**AC Motor Capacitors (Sec ond revision)**	Mechanical Tests on Motor/fan/ Lighting Capacitors Robustness of termination Flexibility Test/ Soldering Test	IS 2993: 1998 (RA 2003) / IEC 60252: 1993 Cl. 2.11 IEC 60252-1 (Edition 2.0): (2013 - 08) Cl. 5.11 IEC 60252-2 (Edition 1.0): (2013 - 08) Cl. 5.11	Upto 100 kVar, 3 phase/ 10 pF to 1700 μF
76.	**Shunt Capacitors for the self-healing type for ac Power systems upto 1000 V. Part 1 General performances Testing and rating-safety requirements**	Lightning Voltage withstand Test between terminals and Container	IS 13340(Part 1): 2012/ IEC 60831-1: 2002 Cl. 15 IEC 60831-1 (Edition 3.0): (2014 - 02), Amd. 1 Cl. 15	Upto 100 kVar, 3phase/ 10 pF to 1700μF 5kVp to 35kVp

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
77.	**Shunt Capacitors of non self healing type for ac Power systems upto 1000 V Part 1 General – performance,- Guide for installation and Operation** **High Voltage Capacitors / HT Capacitors**	Lightning Voltage withstand Test between terminals and Container	IS 13585 (Part 1): 2012/ IEC 60931-1: 1996 Cl. 15 IEC 60931-1 (Edition 3.0): (2014 - 02) , Amd. 1, Cl. 15	Upto 100 kVar, 3phase/ 10 pF to 1700μF 5kVp to 35kVp
78.	**Shunt Capacitors for a.c Power systems above 1000 V: Part 1 General performances Testing and rating safety requirements**	Lightning Voltage withstand Test between terminals and Container	IS 13925 (Part 1): 2012/ IEC 60871-1: 2005 Cl. 16 IEC 60871-1 (Edition 4.0): (2014 - 05) Cl. 15.2 IEEE Std.18: 2012 Cl. 7.1.1	Upto 100 kVar, 3phase/ 10 pF to 1700μF 5kVp to 35kVp
79.	**Series Capacitors for Power systems**	Lightning Voltage withstand Test between terminals and Container	IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.11 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Rev.1.0 Cl. 2.11	Upto 100 kVar, 3phase/ 10 pF to 1700μF 5kVp to 35kVp
80.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**	Lightning Voltage withstand Test between terminals and Container	IS 11548: 1986 (RA 2006) (Edition 1.1) Cl. 9.6	0.1 μF to 0.330 μF 50 kVp to 500 kVp
81.	**Coupling Capacitors, Capacitive Dividers and Grading Capacitors**	Lightning Voltage withstand Test between terminals and Container	IS 9348: 1998 (RA 2004) / IEC 60358: 1990, Rev.1.0, Cl.9.2.5 IEC 60358 (Edition 2.0): 1990 Cl. 9.2.5 IEC 62146-1 Cl. 8.4.6	10 pF to 1 μF 50 kVp to 500 kVp

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Low Voltage Capacitors/ LT Capacitors			
82.	**Tubular Fluorescent, High Pressure mercury and Low Pressure Sodium Vapour Discharge Lamp Circuits**	Self Healing Test on LT Capacitors	IS 1569: 1976 (RA 2006) (Edition 2.1) Cl. 5.11 IEC 61048 (Edition 2.0): (2006 - 03) , Amd. 1 Cl. 16 IEC 61049 (Edition 1.0): (1991 - 03)	Upto 100 kVar, 3 Phase /10 pF to 1700 μF
83.	**Capacitors for Electric fan motors**	Self Healing Test on LT Capacitors	IS 1709: 1984 (RA 2006) Amd. 1, Amd. 2, Cl. 7.14	Upto 100 kVar, 3 Phase /10 pF to 1700 μF
84.	**AC Motor Capacitors (Sec ond revision)**	Self Healing Test on LT Capacitors	IS 2993: 1998 (RA 2003)/ Cl. 2.15 IEC 60252: 1993 Cl. 5.1.15 IEC 60252-1(Edition 2.1): (2013 - 08) Cl. 5.15	Upto 100 kVar, 3 Phase /10 pF to 1700 μF
85.	**Shunt Capacitors for the self-healing type for ac Power systems having a Rated Voltage upto 1000 V. Part 1 General performances Testing and rating – safety requirements**	Self Healing Test on LT Capacitors	IS 13340 (Part 1): 2012 /IEC 60831-1: 2002 Cl. 18 IS 13340 (Part 2): 2012/ IEC 60831-2: 1995 Cl. 18 IEC 60831-1 (Edition 3.0): (2014 - 02) , Amd. 1 Cl. 18 IEC 60831-2 (Edition 3.0) : (2014 – 02) Cl. 18	Upto 100 kVar, 3 Phase /10 pF to 1700 μF
	High Voltage Capacitors/ HT Capacitors			
86.	**Shunt Capacitors for Power systems having Rated Voltage**	Cold duty/ Endurance/ Over Voltage Cycling Test on HT Capacitors/ Conditioning Tests/ Endurance/ Ageing Test/	IS 13925 (Part 2): 2002/ IEC 60 871– 2: 1999 Cl. 2.13 & Cl. 2.14	Upto 1000 kVar, 9 kVac, 50 μF, 1 Phase, 1000 kvar, 20 kVac, 8 μF, 1 Phase/10 pF to 110 μF

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	above 1000 V : Part 2 Endurance Testing	AcceleRated Life Test on HT Capacitors/ Conditioning Tests on Electrical equipment / Partial Discharge Test	IEC TS 60871-2 (Edition 2.0): (1996 – 06), Cl. 2.13 & Cl. 2.14 IEC 60871-1: 2014 Cl. 16 IEC 60871-2: 2014 Cl. 4.2	
87.	**Series Capacitors for Power systems – Cold duty Test**		IEC 60143-1 (Edition 4.0): (2004 - 01) Cl. 5.12 IS 9835 (Part 1): 2001/ IEC 60143-1: 1992 Cl. 2.12	Upto 1000 kVar, 9 kVac, 50 μF, 1 Phase, 1000 kvar, 20 kVac, 8 μF, 1 Phase/10 pF to 110 μF
88.	**Capacitors for surge protection for use in Voltage system above 1000 V to 45 kV**		IS 11548 : 1986 (RA 2006) (Edition 1.1) Cl. 9.12	0.1 μF to 0.33 μF/ >50 pC
89.	**Tuning reactors**	Temperature rise	IS 5553 (Part 5) Cl. 5	Upto 20 kV, upto 300 A, upto 1200 kVar
90.	**Line traps for a.c. Power systems**	Temperature rise	IEC 60353 (Edition 2.0): (1989-11) Cl. 19.0	Upto 2000 A
91.	**Inter connecting Busbars for AC Voltage above 1kV to 36kV**	Temperature rise	IS 8084: 1976 (RA 2012) Cl. 7.1.2	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
92.	**Voltage transformers Measuring Voltage transformers, CVT Upto 132 kV, 450 mA**	Temperature rise	IS 3156 (Part 1): 1992 Cl. 9.5 IS 3156 (Part 2): 1992 IS 3156 (Part 3): 1992 Cl. 10.1.1.1 IS 3156 (Part 4): 1992 (RA 2012)	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
93.	**Disconnectors (Isolators and Earthing Switches) for above 1000 V**	Temperature Rise, Resistance Measurement	IS 9921 (Part 2): 1982 (RA 2012) IS 9921 (Part 4): 1985 (RA 2012) Cl. 3.2	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
94.	**Electric Power Connector**	Temperature Rise, Resistance Measurement	IS 5561: 1970 (RA 2012) Cl. 11 & 12	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
95.	**Carries and bases in rewirable type Electric fuses for upto 650 V**	Temperature Rise	IS 2086: 1993 (RA 2012) Cl. 9.6	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
96.	**Alternating current switches for Voltages above 1000 V**	Temperature Rise, Resistance Measurement	IS 9920(Part 1): 2002 / IEC 60265-1: 1988 (RA 2012) IS 9920(Part 2): 2001 / IEC 60265-2: 1988 (RA 2011) IS 9920 (Part 4): 1985 (RA 2012) Cl. 3.2	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
97.	**AC metal-enclosed switchgear & control gear for Rated Voltages above 1kV and including 52kV**	Temperature Rise, Resistance Measurement	IS 3427: 1997 IEC 60298-1: 1990 (RA 2012)Cl. 6.3& 6.4	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
98.	**H.V Switchgear & Controlgear Part 1: Common specifications**	Temperature Rise, Resistance Measurement	IS/IEC 62271-1: 2007 (RA 2013) Cl. 6.4 & 6.5	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
99.	**Current transformer Measuring Current transformers Protective current transformers Protective CT – Special Purpose**	Temperature Rise	IS 2705 (Part 1): 1992 IS 2705 (Part 2): 1992 IS 2705 (Part 3): 1992 IS 2705 (Part 4): 1992 (RA 2012) Cl. 9.7	Upto 10000 A 200 V , 500 Adc 0.1 μΩ to 20 kΩ

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
100.	**H.V Fuse - Current limiting fuses** **H.V Fuse - Expulsion of similar fuses**	Temperature Rise	IS 9385-1: 1979 (RA 2012) IS 9385-2: 1980 (RA 2012) Cl. 4.6	Upto 10000 A 200 V , 500 Adc 0.1 μΩ to 20 kΩ
101.	**Low Voltage switchgear & controlgear - General Rules**	Temperature Rise	IS/IEC 60947-1: 2007 (RA 2012) Cl. 8.3.3.3	Upto 10000 A 200 V , 500 Adc 0.1 μΩ to 20 kΩ
	Circuit breaker		IS/IEC 60947-2: 2003 (RA 2012) Cl. 8.3.3.6	
	Switches, Disconnectors, Switch disconnectors, & fuse combination units **Contactors and Motor Starters**	Temperature Rise	IS/ IEC 60947-3: 1999 (RA 2013) IS/ IEC 60947-4: 2000 (RA 2013)	Upto 10000 A 200 V , 500 Adc 0.1 μΩ to 20 kΩ
102.	**Low-Voltage Switchgear and controlgear assemblies**	Temperature Rise	IS 8623-1: 1993 (RA 2013) IEC 60439-1: 1985 Cl. 8.2.1	Upto 10000 A 200 V , 500 Adc 0.1 μΩ to 20 kΩ

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
103.	**Low-Voltage Switchgear and controlgear assemblies-Busbar Trunking systems**	Temperature Rise	IS 8623-2: 1993 (RA 2013) IEC 60439-2: 1987 Cl. 8.2.1	Upto 10000 A 200 V , 500 Adc 0.1 μΩ to 20 kΩ
104.	**Low Voltage Fuses For Voltages Not Exceeding 1000V AC Or 1500V DC**	Temperature Rise	IS 13703-1: 1993 IEC 60269-1: 1986 (RA 2014) Cl. 8.3	Upto 10000 A 200 V, 500 Adc 0.1 μΩ to 20 kΩ
105.	**Metal fittings of insulators for overhead Power lines with nominal Voltage greater than 1000 V**	Resistance Measurement	IS 2486-1: 1993 (RA 2013) Cl. 12.1.1.a	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
106.	**Conductor and Earth Wire Accessories for Over head Power Lines**	Resistance Measurement	IS 2121(Part 2): 1981 (RA 2012) Cl. 5.3	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
107.	**Hard Drawn Stranded Aluminium and Steel cored Aluminium Conductors for Over head Power Transmission Purpose Aluminium conductor for overhead transmission purposes-Aluminium**	Resistance Measurement	IS 398-1: 1996 (RA 2012) Cl. 12.5 IS 398-2: 1996 (RA 2012) Cl. 13.6 IS 398-5: 1992 (RA 2012) Cl. 13.8	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	conductor galvanised steel reinforced Aluminium conductor galvanised steel reinforced for extra high Voltage (400 kV and above)			
108.	**Automatic Circuit reclosures**	Temperature Rise, Resistance Measurement	IS 7567: 1998 (RA 2012) Cl. 8.2	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
109.	**On Load Tap Changers**	Temperature Rise	IS 8468: 1977 (RA 2011) Cl. 8.5	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
110.	**Performance requirements of compression joints of Aluminium conductors in insulated Cables**	Resistance Measurement	IS 8337: 1976 (RA 2010) Cl. 6.2	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
111.	**H.V Switchgear & Controlgear Part 1: Common specifications High Voltage ac circuit breaker Alternating current disconnectors & earthing switches AC Switch fuse combination A.C. Metal enclosed Switchgear control gear for Voltage above 1kV to 52kV**	Temperature Rise, Resistance Measurement	IEC 62271-1: 2011 IEC 62271-100: 2012 IEC 62271-102: 2013 IEC 62271-105: 2012 IEC 62271-111: 2012 IEC 62271: 200: 2011 Cl. 6.4 & 6.5	Upto 10000 A 200 V , 500 A dc 0.1 μΩ to 20 kΩ

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
112.	**On-Load tap changer**	Temperature Rise	IEC 60214-1: 2014 Cl. 5.2.1	Upto 10000 A 200 V , 500 A dc 0.1 μΩ to 20 kΩ
113.	**Part 1: Instrument transformers – General requirements** **Part 2: Additional Requirements for Current Transformers** **Part 3: Additional requirements inductive Voltage transformers** **Part 4: Additional requirements for combined transformers** **Part 5: Additional requirements for capacitive Voltage transformers**	Temperature Rise	IEC 61869-1: 2007 IEC 61869-2: 2012 IEC 61869-3: 2011 IEC 61869-4: 2013 IEC 61869-5: 2011 Cl. 7.2.2	Upto 10000 A 200 V , 500 A dc 0.1 μΩ to 20 kΩ
114.	**M.V Distribution Fuse boards**	Temperature Rise	ESI Standard 37-2: 1974 Issue-1 Cl. 7	Upto 10000 A 200 V , 500 A dc 0.1 μΩ to 20 kΩ
115.	**Insulators and conductor fittings for overhead Power lines**	Resistance Measurement	BS 3288 (Part 1): 1973	Upto 10000 A 200 V , 500 A dc 0.1 μΩ to 20 kΩ
116.	**A.C. Circuit Breakers for Railway applications**	Temperature Rise	IEC 60077-4: 2003 Cl. 8.2.2 & 9.3.3.2 / 6	Upto 10000 A 200 V , 500 A dc 0.1 μΩ to 20 kΩ

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
117.	**High Voltage fuses - Current limiting fuses High Voltage fuses - Expulsion and similar fuses**	Temperature Rise	IEC 60282-1: 2014 IEC 60282-2: 2008 Cl. 8.5	Upto 10000 A 200 V , 500 A dc 0.1 μΩ to 20 kΩ
118.	**Voltage Transformer**	Temperature Rise	IEC 60186: 1987	Upto 10000 A 200 V , 500 A dc 0.1 μΩ to 20 kΩ
119.	**Low-Voltage switchgear and control gear assemblies - Part 1: General rules** **Part 2: Power switchgear and control gear assemblies** **Part 6: Busbar trunking systems (Busways)**	Temperature Rise	IEC 61439-1: 2011 IEC 61439-2: 2011 IEC 61439-6: 2012 Cl. 10.10	Upto 10000 A 200 V , 500 A dc 0.1 mΩ to 20 kΩ
120.	**Part 3: Particular Requirements for Low Voltage Switchgear and Control gear Assemblies intended to be Installed in Places where Unskilled persons have access for their Use-Distribution Boards**	Temperature Rise	IEC 60439-3: 2001	Upto 10000 A 200 V , 500 A dc 0.1 mΩ to 20 kΩ

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
121.	**L.V. Switchgear and control gear L.V. Switchgear and control gear - Circuit Breakers Low voltage switchgear & control gear Switches, Disconnector, Switch Disconnectors & fuse Combination units**	Temperature Rise	IEC 60947-1: 2014 IEC 60947-2: 2013 IEC 60947-3: 2014 Cl. 7.2.2 & 8.3 - 8.3.3.6 / 8.3.3.3 & 8.3.2.5	Upto 10000 A 200 V , 500 A dc 0.1 mΩ to 20 kΩ
122.	**Solar Radiation on Outdoor Metal-Enclosed Switchgear**	Temperature Rise, Resistance Measurement	ANSI/IEEE C 37.23: 1986 Cl. 4.2 & 4.3	Upto 10000 A 200 V , 500 A dc 0.1 mΩ to 20 kΩ
123.	**Electrical connectors-Connectors to Use Between Aluminium –to– Aluminium or Aluminium –to – Copper Bare Overhead conductors**	Temperature Rise	ANSI/IEEE C119.4: 2004 Cl. 4.2 & 4.3	Upto 10000 A 200 V , 500 A dc 0.1 mΩ to 20 kΩ
124.	**IEEE Standard requirements for HV Switches** **IEEE Standard Test code for HV Air Switches**	Resistance Measurement	IEEE C.37.30: 1997 IEEE C.37.34: 1994	Upto 10000 A 200 V , 500 A dc 0.1 mΩ to 20 kΩ
125.	**IEEE Standard for Metal-Clad and Station-Type Cubicle Switchgear**	Temperature Rise	IEEE C.37.20.2: 1993 Cl. 7	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
126.	**Electric Power Connection for Substations**	Temperature Rise, Resistance Measurement	NEMA: CC-1: 2005 Cl. 3.1	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
127.	**Railway applications – Rolling stock – Pantographs – Characteristics and Tests –Part 1: Pantographs for main line vehicles**	Temperature Rise	IEC 60494-1: 2013 Cl. 6.12	Upto 10000 A 200 V, 500 A dc 0.1 mΩ to 20 kΩ
III.	**ENVIRONMENTAL TEST FACILITY**			
1.	**High Voltage Capacitors / HT Capacitors (equipments)**	Cold Test	IEC 60068-2- 1 (Edition 6.0): (2007-03) Cl. 5.6 IS 9000 (Part 2): 1977 (RA 2004) Section 1 to 4	(-)70 °C to (+)150 °C
		Dry Heat	IEC 60068-2-2 (Edition 5.0): (2007-07) Cl. 5. 6 IS 9000 (Part 3): 1977 (RA 2004) Section 1 to 5	(+)30 °C to (+)150 °C
	High Voltage Capacitors / HT Capacitors (equipments)	Change of Temperature	IEC 60068-2-14 (Edition 6.0): (2009-01) Cl. 7.8 IS 9000 (Part 14): 1988 (RA 2004) Section 1 to 3	(-)70 °C to (+)150°C Rate of Change to 1 °C /min or thermal shock
		Damp Heat cyclic	IEC 60068-2-30 (Edition 3.0): 2005 Cl. 5.6 IS 9000 (Part 5): 1981 (RA 2004) Section 1 and 2	(+)25 °C to (+)55 °C & Upto 95 % RH

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Damp Heat steady state	IEC 60068-2-78 (Edition 2.0): (2012-10) Cl. 4.5 IS 9000 (Part 4): 1979 (RA 2004)	(+)25 °C to (+)55 °C & Upto 95 % RH
		Composite Temperature-Humidity cycle Test	IS 9000 (Part 6): 1978 (RA 2004)	(-)70 °C to (+)150 °C Upto 95 % RH
2.	**Solar Inverter (Upto 10 kW), UPS (Upto 10 kW), LED luminaires (Upto 250 W)**	Damp Heat Cyclic Test (12 h+12 h cycle)	IEC 60068-2-30: (2005-08) Cl. 7.3	25 °C to 55 °C RH 75 % to 90 %
		Change of Temperature	IEC 60068-2-14: 2009-01 Cl. 8. 0	(-)5 °C to (+)55 °C
		Cold Test	IEC 60068-2-1: 2007-03 Cl. 5.2 & Cl. 6.0	(-)10 °C (±)2 °C
		Dry Heat Test	IEC 60068-2-2: 2007-07 Cl. 5.2 & Cl. 6.0	(+)55 °C (±)2 °C RH < 50 %
IV.	**ELECTRICAL MATERIALS**			
1.	**Solid Insulating Materials**			
a.	**For Cable Insulation, Sheath, Armour**	Tensile Strength & Elongation	IEC 60840: 2011 IEC 60811-505: 2012 IS 7098 (Part 1): 1988 (RA 2012) Cl. 19.1 IS 7098 (Part 2): 1985(RA 2005), (Edition 2.2): (2007-11) Cl. 18.1	Breaking load less than 50 kN 500 N, 5000 N, 50000 N load cells

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 60502-1: 2004 Amd.1: 2009 Cl. 18.5.5 IEC 60502-2: 2014 IS 3975 (Part 2): 1999 (RA 2004) Cl. 8.1 IS 1554 (Part 1): 1988 (RA 2005) (Edition 4.3): (2007-11) Cl. 15.2 IS 1554 (Part 2): 1988 (RA 2005) (Edition 3.1): (1994-05) Cl. 18.1 IS 10810 (Part 37): 1984 (RA 2011) IS 10810 (Part 7): 1984 (RA 2011)	
b.	**Copper/ Aluminium Conductor**	Resistance/ Resistivity/ Conductivity	IS 10810 (Part 5): 1984(RA 2011) IS 13778 (Part 5): 2012/ IEC 851-5: 2008	600 μΩ to 60 Ω
c.	**Polymeric Insulation Viz. PE, PP, HDPE and allied Materials**	Permittivity & Dissipation Factor	ASTM D 150: 11 IS 4486: 1967 (RA 2013)	50 Hz, upto 2 kV, 1 MHz, 1 V
d.	**Low Voltage Switchgear & Control gear assembly**	Resistance to Corrosion	IEC 60068-2-30(Test-Db):2005Cl.6 IEC60068-2-11: 1999 Cl. 4.2 IEC 61439-1: 2011Cl. 10.2.2 IEC 61439-2: 2011Cl. 10.2.2	(+)10 °C to 95 °C 10 % RH to 98 % RH
		Resistance to Ultra-Violet (UV) Radiation, Flexural Strength Charpy Impact Strength	ISO 4892-2 (Part 2): 2013 (Xenon-Arc-Method-A)–Cl. 6 ISO 178: 2010 ISO 179-1 (Part 1): 2010	Irr: 0.5 W/m^2.nm at 340 nm 0 to 5000 N 0 to 22 J

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 61439-1: 2011 Cl. 10.2.4 IEC 61439-2: 2011 Cl. 10.2.4	
2.	**Magnetic Materials**			
a.	**CRGO**	Core Loss by Epstein Test & Single sheet Tester.	IS 649 (Sec II): 1997 Cl. 10.6 IEC 60404-2: 2008 and IEC 60404-3: 2002	Upto 2 T /0.001 T
		Magnetic polarization. By Epstein Test & Single sheet Test	IS 649 : 1997 Section 2, Cl. 10.6 IEC 60404-2: 2008 and IEC 60404-5: 1993Cl. 6	Upto 30,000 A/m
		Surface insulation resistivity	IS 649 : 1997 Section 4, Cl. 22-29 IEC 60404-11: 1999	0.5 V (±)0.5 %
		Stacking factor	IS 649: 1997 Section 7, Cl. 43-48 IEC 60404-13: 1995	Upto SF 1/0.001
		Dimensions – Length, width and thickness	IS 649: 1997 Section 10, Cl. 63-64 IEC-60404-2, Section 3 IEC-60404-3, Section 3.4	1000 mm /1 mm & 0 to 10 mm / 0.001 mm
		Ductility	IS 649: 1997Section 8, Cl. 55-60	Qualitative
b.	**CRNGO**	Total specific loss / core loss by Epstein Test	IS 648: 2006 Section 7, Cl. 7.1.2 IEC 60404-2: 2008	Upto 2 T / 0.001 T
		a.c. magnetization by Epstein Test	IS 648: 2006 Section 7, Cl. 7.1.1 IEC 60404-2: 2008	Upto 30,000 A/m
		Surface insulation characteristics.	IS 648: 2006 Section 7, Cl. 7.2 IEC 60404-11: 1999	0.5 V (±)0.5 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Stacking factor	IS 648: 2006 Section 9, Cl. 9.1 IEC 60404-13: 1995	Upto SF 1 / 0.001
		Bend Test.	IS 648: 2006 Section 9, Cl. 9.2	Qualitative
		Dimensions – Length, width and thickness.	IS 648: 2006 Section 8, Cl. 8.1-8.3 IEC-60404: 2, Section 3	1000 mm /1 mm & 0 to 10 mm / 0.001 mm
3.	**Liquid Dielectric Materials**			
a.	Inhibited & Un-inhibited Mineral insulating oil	Electric Strength	IS 6792:1972 RA 2013 IEC 60156:1995	5 kV to 100 kV
		Dielectric Dissipation Factor	IS 6262:1971 RA 2011 IEC 60247:2004	0.00001 to 9.9
		Specific Resistance (Resistivity) At 90 °C : At 27 °C :	IS 6103:1971 RA 2011 IEC 60247:2004	 10^9 to 10^{16} Ω–cm 10^9 to 10^{16} Ω–cm
V.	**SWITCHGEAR EQUIPMENT**			
1.	**High Voltage Circuit Breakers**	Basic Short circuit Test duties and short line fault Tests		
		Direct Test facility	IS 13118: 1991 IEC 62271-100: 2012	3 Phase 1.0 kA to 40 kA 3.6 kV to 72.5 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Synthetic Test facility	IS 13516: 1993 IEC 62271 – 101: 2006	1 Phase 2.0 kA to 63 kA 36 kV to 400 kV
		Out of phase making and breaking Tests		
		Direct Testing facility	IS 13118: 1991 IEC 62271-100: 2012	3 Phase 3.6 kV to 36 kV
		Synthetic Test facility	IS 13516: 1993 IEC 62271–101: 2006	1 Phase 36 kV to 245 kV
		Line/ Cable charging current switching Tests	IS 13118: 1991 IEC 62271-100: 2012	3 Phase 3.6 kV to 36 kV 1 A to 50 A
			IS 13516: 1993 IEC 62271–101: 2006	1 phase 36 kV to 245 kV 1 A to 250 A
		Single capacitor bank current switching Tests	IS 13118: 1991 IEC 62271-100: 2012	3.6 kV to 36 kV 40 A to 400 A
			IEC 62271–101: 2006	1 phase 36 kV to 245 kV 40 A to 400 A
	High Voltage Circuit Breakers	Back to back capacitor bank current switching Tests	IS 13118: 1991 IEC 62271-100: 2012	3.6 kV to 36 kV 40 A to 400 A
			IEC 62271–101: 2006	1 phase 36 kV to 245 kV 40 A to 400 A

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Small Inductive current switching Tests (Transformer magnetising current)	IS 13118: 1991 IEC 62271-100: 2012 IEC 62271-110: (2012-09)	3.6 kV to 36 kV, 400 A
		Short time current Test	IS 13118: 1991/ IEC 62271-100: 2012 IS 12729: 1988/95 IEC 60694: 2001 IS 3427: 1997	10 kA to 63 kA for 3s
		Mechanical Operation	IEC 62271-100: 2012 IEC 60694: 2001 IS 13118: 1991	10 kA to 63 kA for 3s
2.	**High Voltage Switches**	Line/Cable charging current switching Tests	IS 9920 (Part 1): 2002 IEC 60265: 1998	3 Phase 6.6 kV to 36 kV, 10 A to 50 A 1 phase 72.5 kV to 245 kV, 10 A to 250 A
	High Voltage Switches	Single capacitor bank current switching Tests	IS 9920 (Part 1): 2002 IEC 60265: 1998	3 Phase 6.6 kV to 36 kV, 10 A to 800 A 1 Phase 6.6 kV to 36 kV, 10 A to 1250 A, 12 kV to 72.5 kV,

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				10 A to 630 A, 12 kV to 145 kV, 10 A to 750 A, 245 kV,10 A to 950 A
		Short time current Test	IS 9920 (Part 1): 2002 IEC 60265: 1998 ANSI/IEEE C37-30: 1997, C37-32: 1996 C37-34: 1994	3 Phase 10.0 kA to 300 kA for 1 s 10.0 kA to 170 kA for 3 s 1 phase 10.0 kA to 260 kA for 1 s 10.0 kA to 150 kA for 3 s
		Transformer OFF Load current breaking/ motor switching current breaking	IS 9920 (Part 1): 2002/ IEC 60265: 1998	6.6 kV to 36 kV
		Short circuit making Test	IS 9920 (Part 1): 2002 IEC 60265: 1998	3 Phase 6.6 kV to 36 kV, 100 kA peak 6.6 kV to 72.5 kV, 50 kA peak 1 Phase 6.6 kV to 12 kV, 160 kA peak 6.6 kV to 36 kV, 100 kA peak 6.6 kV to 72.5 kV, 50 kA peak
3.	**High Voltage Fuses**	Breaking capacity Tests	IS 9385: 1979/80/83/92 IEC 60282 –1& 2: (2009/2008)	100 MVA to 1400 MVA, 3.3 kV to 72.5 kV
4.	**High Voltage Switch Boards Terminal Boxes M.V metal enclosed switchgear**	Arcing due to Internal faults	IEC 62271-1: (2011-08), ANSI/IEEE C37.20.7: 2001, IEC 61330: 1995	3.6 kV to 36 kV, 10 kA to 40 kA

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
5.	**Power Transformers Distribution Transformers, Traction transformers, Potential transformers**	Ability to withstand short circuit & all routine Tests	IS 2026 (Part 1,2,3,5): 2011/2010/2009/2011 IEC 60076 (Part 1,2,3,5,10)-1: 2011/2011/2013/2006/2005 IS 11171: 1985/1994 IEC 60076 –11: 2004 IS 1180: 1989 IEC 60310: 2004 IS3156: 1992 IEC 60044-05: 2004 IEC 60044-2: 1997 ANSI C-57.12-00 & .90: 1993	3 Phase 11 kV to 66 kV, 50 MVA 1 Phase 66 kV to 400 kV, 250 MVA
6.	**Insulator Strings**	Power Arc Tests	Technical Report Type 2 IEC 61467: 2008	2 kA to 40 kA, 0.5 s 10 kV to 40 kV
7.	**Lightning Arrester**	Pressure Relief Tests	IS 3070: 1985/ IEC 60099 –1 & 4: (1991/98)	10 kA to 50 kA
8.	**A.C Metal enclosed Switchgear & Controlgear**	Short Time current Test	IEC 62271-203: 2011 IEC 62271-201: 2014 IS 3427: 1997 IS 12729: 2004 ANSI/IEEE C37.20: 1999	13.1 kA to 80 kA for 1 s 13.1 kA to 80 kA for 3 s
9.	**High Voltage Contactors**	Short Time current Test	IS 9046: (1992/2002) IEC 60470: 2000	3 Phase 10 kA to 300 kA for 1 s 10 kA to 170 kA for 3 s 1 phase 10 kA to 260 kA for 1 s 10 kA to 150 kA for 3 s

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
10.	**AC Disconnectors and Earth Switches**	Short Time current Test Induced current switching Test	IS 9921 (Part 1,2,3,4,5): 1981/1982/1982/1985/1985 IEC 62271-102: 2013	10.0 kA to 120 kA
11.	**Current Transformers**	Short Time current Test	IS 2705: (1992/2002) IEC 60044–1: (1996/2000) BS 7226: 1989	10.0 kA to 150 kA for 3 s
12.	**Reactors**	Short Time current Test	IS 5553: (1989/90) IEC 60076-6: (2007-12)	100 MVA to 2500 MVA, 3ph 100 MVA to 1400 MVA. 1 ph
13.	**Line Traps**	Short Time current Test	IS 8793: (1989/95) IEC 60353: (1989/2002)	10 kA to 40 kA rms for 1 s
14.	**Busducts, Busbars, Generator neutral busbar compartment**	Short Time current Test	IS 8084: (1976/81) ANSI/IEEE C37.20.2: 1999	3 Phase 40 kA to 300 kA for 1 s 40 kA to 170 kA for 3 s
15.	**Power Connectors ACSR conductor**	Short Time current Test	IS 5561: 1970	3 Phase 10 kA to 300 kA for 1 s 10 kA to 170 kA for 3 s 1 phase 10 kA to 260 kA for 1 s 10 kA to 150 kA for 3 s
16.	**LV circuit breakers**	Short Circuit Making and Breaking Capacity Tests	IS 13947: 1993 IEC 60947 (Part 1,2,3,4)-1,5-1,6-1,7-1,6-2: 2014/2013/2012/ 2012/2009/2005/2007/2009	10 kA to 115 kA rms at 460V, 3 ph 10 kA to 300 kA rms at 1.2 kV, 3 ph
17.	**Low Voltage Switches,**	Short Circuit Making and Breaking Capacity Tests	IS 13947-1: 2004 IS 13947-3: 1993	10 kA to 115 kA rms at 460V, 3 ph

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	disconnector, Switch-disconnectors & fuse combination units		IEC 60947 (Part 1,2,3,4)-1,5-1,6-1,7-1,6-2: 2014/(2013 /2012/2012/2009/2005/2007/2009	10 kA to 300 kA rms at 1.2 kV, 3 ph
18.	**Low Voltage switchgear and Controlgear assemblies**	Short Time Current Test	IS 8623: 1993 BS 5486: 1986 IEC 61439-1: 2011 IEC 61439-2: 2011	10 kA to 300 kA rms for 1 s, 3 ph 10 kA to 260 kA rms for 1 s, 1 ph
19.	**LV fuses**	Short Circuit Breaking capacity	IS 13703: 1993 IEC 60269: 2006 BS 88: 1988	10 kA to 100 kA rms at 460 V 10 k A to 260 kA rms at 1.2 kV
20.	**Cable Accessories & Joints**	Short Time current Test	IS 13573: 1992 IEC 60502: 2004	10 kA to 300 kA rms 1 s, 3 ph 10 kA to 260 kA rms 1 s, 1 ph
21.	**Portable Equipment for earthing**	Short Time current Test	IEC 61230: 2008	10 k A to 300 kA rms 1 s, 3 ph 10 kA to 260 kA rms 1 s, 1 ph
22.	**Bushings**	Thermal and Dynamic short time current withstand Test	IEC 60137	10 kA to 260kA rms, 1 s
23.	**Post Insulators**	Arc Test	IEC 60168: (2001-04)	10 kA to 260 kA rms, 1 s
VI.	**TRANSMISISON LINE EQUIPMENT AND ACCESSORIES**			
1.	**Insulator strings, Post Insulators, Railway insulators, Long rod insulators, Isolators, AB**	Corona inception / Extinction	IS 731(Part 1): 2006 (RA 2007) IS 10162 (Part 1): 1982 (RA 2007) IS 2071 (Part 1): 2004 (RA 2007) IS 2544 (Part 1): 2006 (RA 2007) IS 4318 (Part 1): 2003 (RA 2007)	1 kV to 1200 kV(rms)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	switches, Circuit Breakers, Reactors, Line Traps, Repair sleeves, Spacers, Spacer dampers, ACSR conductor and Accessories from 3.6 kV to 400 kV		IS 398 (Part 5) (RA 2007) ANSI C29.1: 1988 ANSI C29.2: 1992 C29.3/86, C29.4/84, C29.5/84, C29.6/84, C29.7a/86, C29.9/83 RDSO SPEC 4318	
2.	**Disc/Pin/Post/Solid Core/Hollow Insulator, Insulator Strings (All Types) Lightning Arrester Housings and Insulating Tubes from 3.6kV to 400kV**	Visible discharge	IS 731 (Part 1): 2006, IS 2544 (Part 1): 2006, IS 4318 (Part 1): 2003, IS 2071(Part 1): 2004	1 kV to 1200 kV(rms)
3.	**Polymeric insulator/ Composite insulator Disc/Pin/Post/hallow Insulating Materials. Ratings upt0 400 kV**	Steep front impulse flash over	IEC 61109: 1992 IEC 62217: 2012 IEC 61462: 2007 CIGRE 23-07, CAN/CSA:C411.1 M89: 1989, RDSO SPEC 4318	10 kV to 500 kV(peak)
4.	**Lightning Arresters Ratings upto 245 kV**	Lightning Impulse Spark over.	IS 3070: 2004, IEC 60099.1: 1999	10 kV to 2500 kV(peak)
5.	**Lightning Arresters Ratings upto 245 kV**	Front of wave Spark over.	IS 3070/2004, IEC 60099.1: 1999	10 kV to 2500 kV(peak)
6.	**Disc/Pin/Post/Solid core/ Hollow insulator, insulator strings (All Types) Lightening Arrester Housings**	Impulse flashover	IS 3070/2004, IEC 60099.1: 1999 ANSI C29.1/1988, ANSI C29.2/92 C29.3/86, C29.4/84, C29.5/84, C29.6/84, C29.7a/86, C29.9/83	10 kV to 2500 kV(peak)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
7.	**Disc/Pin/Post/Solid Core/Hollow Insulator, Insulator Strings (All Types) Lightning Arrester Housings And Similar Insulating Materials upto 425kV A. B. Switches /Isolator/Circuit Breaker/Bus Duct /Cable/Bushing / Panel/Horn Gap/Dropout Fuse Unit upto 420 kV PT/ CVT/ Coupling/ Tap Changers Capacitors/Grading Capacitors/R.V.T.S/ C.T - PT Units upto 420kV**	Impulse withstand	IS 692: 2005/IS 731: 2006/ IS 1180: 2003/ IS 2544: 2006/ IS 1445: 2004/IS 2026: 2009/ IS 2071: 2006/ IS 2099: 2003/ IS 2705: 2002/ IS 13925: 1998/ IS 3070: 2004/ IS 3151: 2006/ IS 3156: 2002/ IS 3427: 2002/ IS 4318: 2003/ IS 5300: 2004/ IS 5424: 2004/ IS 5553: 2003/ IS 7098: 2003/ IS 8084: 2002/ IS 8269: 2004/ IS 8468: 2006/ IS 8792: 2006/ IS 8793: 2006/ IS 9147: 2006/ IS 9348: 2004/ IS 9385: 2002/ IS 9431: 2004/ IS 9920: 2002/ IS 9921: 2002/ IS 10810: 2001/ IS 11171: 2006/ IS 11548: 2006/ IS 12729: 2004/ IS 13573: 2003/ IS 13947: 2004/ IEC 61869-1: 2007/ IEC 60076.1: 2000/ IEC 60076.3: 2013/ IEC 60099.1: 1991/ IEC 60099-4: 2009/ IEC 62271-102/ IEC 60137: 2003/ IEC 60168: 2001/ IEC 61869-1: (2007-10)/ IEC 61869-2: (2012-09)/ IEC 61869-3,: (2011-07)/	10 kV to 2500 kV
	Series Reactors, Line Traps. Tuning Reactors & Neutral Earthling Reactors to 400kV (Inclusive)	Impulse withstand	IEC 61869-4/ IEC 61869-5: (2011-07)/ IEC 60214: 2003/ IEC 60243-3: 2001/ IEC 60265.2: 1988/ IEC 60282.1: 2005/	10 kV to 2500 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Current transformers upto 420 kV Rating		IEC 60282.2: 1997/ IEC 60289: 1988/ IEC 62271: 200/2003/	
	Power/Distribution Transformers Including Earthling Transformers Autotransformers rating upto 1kVA to 100MVA, 1 kV to 220kV	Impulse withstand	IEC 60353: 1989/ IEC 60358: 1990/ IEC 60383-1: 1993/ IEC 60383-2: 1995/ IEC 61109: 2008/ IEC 62217: 2005/ RDSO SPEC 4318-2: 1993/ IEC 60433: 1998/ IEC 62271: 203: (2003-11)/ IEC 60694: 2002/ IEEE 4: 1995/ BS 159: 1992/ BS 171/ BS 223: 1985/ BS 2692: 1986/ BS 3297: 1982/ BS 3938: 1973/ BS 3941: 1977/ BS 6581: 1985/ ANSI C29.1: 1988/ ANSI C29.2: 92/ C29.3: 86/ C29.4: 84/ C29.5: 84/ C29.6: 84/ C29.7a: 86/ C29.9: 83	10 kV to 2500 kV
8.	**Disc/Pin/Post/Solid Core/Hollow Insulator, Insulator Strings (All Types) Lightning Arrester Housings. Also Items Like Battery Containers, Rubber Mats, Insulating Tube (1kV to 425kV) Insulating Rod / Operating Rod For 220 kV to 420 kV**	Power Frequency Withstand (Dry & Wet)	IS 692: 2005, IS 731: 2006 IS 1180: 2003, IS 2544: 2006, IS 1445: 2004, IS 2026: 2009, IS 2071: 2006, IS 2099: 2003, IS 2705: 2002, IS 13925: 1998, IS 3070: 2004, IS 3151: 2006, IS 3156: 2002, IS 3427: 2002,	01 kV to 1200 kV(rms)
		Power Frequency Withstand (Dry & Wet)		

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Isolator/Circuit Breaker/Bus Duct /Cable/Bushing / Panel/Horn Gap/Dropout Fuse Unit, AB switches. Ratings upto 420 kV		IS 4318: 2003, IS 5300: 2004, IS 5424: 2004, IS 5553: 2003, IS 7098: 2003, IS 8084: 2002, IS 8269: 2004, IS 8468: 2006,	
	P T/ C V T /Coupling /Tap Changers. Capacitors/Grading Capacitors/R.V.T.S/ C.T - PT Units. Ratings upto 420kV Series Reactors, Line Traps. Damping Reactors Tuning Reactors & Neutral Ear thing Reactors. 1.1kV to 400 kV	Power Frequency Withstand (Dry & Wet)	IS 8792: 2006, IS 8793: 2006, IS 9147: 2006, IS 9348: 2004, IS 9385: 2002, IS 9431: 2004, IS 9920: 2002, IS 9921: 2002, IS 10810: 2001, IS 11171: 2006, IS 11548: 2006, IS 12729: 2004, IS 13573: 2003, IS 13947: 2004,	01 kV to 1200 kV(rms)
	Power/Distribution Transformers Including Earthling Transformers Autotransformers 1kVA to 100MVA, 1 kV to 420kV		IEC 61869-1: 2007, IEC 60076.1: 2000, IEC 60076.3: 2013, IEC 60099.1: 1991, IEC 60099-4: 2009, IEC 62271-102, IEC 60137: 2003, IEC 60168: 2001,	
	Lightning Arresters, Lightning arrester Housing Ratings 1 kV to 420kV	Power Frequency Withstand (Dry & Wet)	IEC 61869-1: (2007-10), IEC 61869-2: (2012-09) IEC 61869-3,: (2011-07), IEC 61869-4, IEC 61869-5: (2011-07),	01 kV to 1200 kV(rms)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Bushings /Repair Sleeves 1kV to 420 kV Thyristor Valves 11 kV to 35kV Systems		IEC 60214: 2003, IEC 60243-3: 2001, IEC 60265.2: 1988, IEC 60282.1: 2005, IEC 60282.2: 1997, IEC 60289: 1988, IEC 62271: 200/2003, IEC 60353: 1989, IEC 60358: 1990, IEC 60383-1: 1993, IEC 60383-2: 1995, IEC 61109: 2008 , IEC 62217: 2005, RDSO SPEC 4318-2: 1993, IEC 60433: 1998, IEC 62271: 203: (2003-11), IEC 60694: 2002, IEEE 4: 1995, BS 159: 1992, BS 171, BS 223: 1985, BS 2692: 1986, BS 3297: 1982, BS 3938: 1973, BS 3941: 1977, BS 6581: 1985, ANSI C29.1: 1988, ANSI C29.2: 92 C29.3: 86, C29.4: 84, C29.5: 84, C29.6: 84, C29.7a: 86, C29.9: 83	
		Power Frequency Withstand (Dry & Wet)	IS 2584: 2007, IS 5621: 2004, IS 13770: 2004, IS 13772: 2004, IS 13773: 2004,	01 kV to 1200 kV(rms)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IS 13961: 2004 ANSI C29.1: 1988, C29.2: 1992, C29.3: 86, C29.4: 89, C29.5: 84 C 29.6: 84, C29.7a: 86, C29.9: 83 RDSO SPEC 4318	
9.	**Disc/Pin/Post/Solid Core/Hollow Insulator, Insulator Strings (All Types) Lightning Arrester Housings Insulating Rod /Operating Rod For 220 kV to 420 kV (Inclusive) Repair Sleeves Rated Above 1 kV To 420 kV(Inclusive) Thyristor Valves 11 kV To 35kV Systems** **Disc/Pin/Post/Solid Core/Hollow Insulator, Insulator Strings (All Types)**	Power Frequency Flashover (Dry & Wet)	IS 692: 2005, IS 731: 2006 IS 1180: 2003, IS 2544: 2006, IS 1445: 2004, IS 2026: 2009, IS 2071: 2006, IS 2099: 2003, IS 2705: 2002, IS 13925: 1998, IS 3070: 2004, IS 3151: 2006, IS 3156: 2002, IS 3427: 2002, IS 4318: 2003, IS 5300: 2004, IS 5424: 2004, IS 5553: 2003, IS 7098: 2003, IS 8084: 2002, IS 8269: 2004, IS 8468: 2006, IS 8792: 2006, IS 8793: 2006,	1 kV to 1200 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Lightning Arrester Housings Insulating Rod /Operating Rod For 220 kV to 420 kV (Inclusive) Repair Sleeves Rated Above 1 kV To 420 kV(Inclusive) Thyristor Valves 11 kV To 35kV Systems	Power Frequency Flashover (Dry & Wet)	IS 9147: 2006, IS 9348: 2004, IS 9385: 2002, IS 9431: 2004, IS 9920: 2002, IS 9921: 2002, IS 10810: 2001, IS 11171: 2006, IS 11548: 2006, IS 12729: 2004, IS 13573: 2003, IS 13947: 2004, IEC 61869-1: 2007, IEC 60076.1: 2000, IEC 60076.3: 2013, IEC 60099.1: 1991, IEC 60099-4: 2009, IEC 62271-102, IEC 60137: 2003, IEC 60168: 2001, IEC 61869-1: (2007-10), IEC 61869-2: (2012-09) IEC 61869-3,: (2011-07), IEC 61869-4, IEC 61869-5: (2011-07), IEC 60214: 2003, IEC 60243-3: 2001, IEC 60265.2: 1988, IEC 60282.1: 2005, IEC 60282.2: 1997,	1 kV to 1200 kV
	Disc/Pin/Post/Solid Core/Hollow Insulator, Insulator Strings (All Types)	Power Frequency Flashover (Dry & Wet)	IEC 60289: 1988, IEC 62271: 200/2003, IEC 60353: 1989, IEC 60358: 1990, IEC 60383-1: 1993,	1 kV to 1200 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Lightning Arrester Housings Insulating Rod /Operating Rod For 220 kV to 420 kV (Inclusive) Repair Sleeves Rated Above 1 kV To 420 kV(Inclusive) Thyristor Valves 11 kV To 35kV Systems		IEC 60383-2: 1995, IEC 61109: 2008 , IEC 62217: 2005, RDSO SPEC 4318-2: 1993, IEC 60433: 1998, IEC 62271: 203: (2003-11), IEC 60694: 2002, IEEE 4: 1995, BS 159: 1992, BS 171, BS 223: 1985, BS 2692: 1986, BS 3297: 1982, BS 3938: 1973, BS 3941: 1977, BS 6581: 1985, ANSI C29.1: 1988, ANSI C29.2: 92 C29.3: 86, C29.4: 84, C29.5: 84, C29.6: 84, C29.7a: 86, C29.9: 83 IS 2584: 2007, IS 5621: 2004, IS 13770: 2004, IS 13772: 2004, IS 13773: 2004, IS 13961: 2004	
	Disc/Pin/Post/Solid Core/Hollow Insulator, Insulator Strings (All Types)	Power Frequency Flashover (Dry & Wet)	ANSI C29.1: 1988, C29.2: 1992, C29.3: 86, C29.4: 89, C29.5: 84 C 29.6: 84, C29.7a: 86, C29.9: 83 RDSO SPEC 4318	1 kV to 1200 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Lightning Arrester Housings Insulating Rod / Operating Rod For 220 kV to 420 kV (Inclusive) Repair Sleeves Rated Above 1 kV To 420 kV(Inclusive) Thyristor Valves 11 kV To 35kV Systems		IS 2584: 2007, IS 5621: 2004, IS 13770: 2004 IS 13772: 2004, IS 13773: 2004, IS 13961: 2004 C29.1: 88, C29.2: 92, C29.3: 86, C29.4: 89, C29.5: 84, C29.6: 84, C29.7a: 86, C29.9: 83	
10.	**Insulators/ Bushings, Circuit Breakers/ Lightning Arresters, housings of CVT, C.T's, P.T's, CerAmd. 1c and Glass Insulator To Be Used As Outdoor Exposed To Polluted Outdoor Atmosphere**	Pollution performance	IS 8704/2006, IEC 60099.3: 1990, IEC 60507: 1991, IEC 61109: 2008, ANSI/IEEE:C62.11: 1993	5 kV to 1200 kV
11.	**Lightning Arresters Ratings 1 kV to 245 kV (Inclusive)**	Power Frequency Spark over (Dry & Wet).	IS 3070: 2004, IEC 60099.1: 1999	1 kV to 1200 kV(rms)
12.	**Disc/Pin/Post and Similar Insulating Materials. Also Items Like Battery**	Power Frequency puncture withstand Voltage	IS 731: 2006, IS 1445: 2004, IS 2544: 2006, IS 4318: 2003	1 kV to 600 kV(rms)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Containers, Rubber Mats, Ratings From 1kV To 110kV (Inclusive)		IEC 60383-1: 1993. BSEN 60383-2: 1995 ANSI C29.2: 1992, ANSI C29.5: 1984	
13.	**Disc/Pin/Post/Solid Core/Hollow Insulator, Lightning Arrester Housings Ratings upto 110 kV**	Temperature cycle (on porcelain Insulators)	IS 731: 2006, IS 1445: 2004, IS 2544: 2006, IS 4318: 2003, IS 5300: 2004, IS 5621: 2004, IEC 60383-1: 1993 BSEN 60383-2: 1995, ANSI C29.1: 1992, ANSI C29.2: 1992, ANSI C29.5C29.7: 1983, ANSI C29.9: (1983-1984), ANSI C29.6: 1984, ANSI C- 57.12.00: 2006	Qualitative
14.	**Disc/Pin/Post/Solid Core/Hollow Insulator, Insulator Strings (All Types)**	Porosity Test (on porcelain insulators)	IS 731: 2006, IS 1445: 2004, IS 3070 (Part 3): 1993, IS 2544: 2006,	10 kN to 500 kN (Qualitative)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Lightning Arrester Housings. Ratings up to 420 kV		IS 5300: 2004, IS 5621: 2004, IEC 60168: 1994, IEC 60383-1: 1993, BSEN:60383-2: 1995, BSEN 60305: 1996 ANSI C29.1: 1992, ANSI C29.2: 1992, ANSI C29.3: 1986, ANSI C29.4: 1989, ANSI C29.5: 1984, ANSI C29.6: 1984, ANSI C29.7: 1983, ANSI C29.9: 1983	
15.	**Insulator, Strings of all types 11 kV to 420 kV**	Voltage Distribution	IS 2071 (Part 1): 1993 (RA 2006)	1 kV to 550 kV (rms)
16.	**Disc/Pin/Post/Solid Core Ratings From 1 kV to 36 kV**	Electro Mechanical Failing Load Test	IS 731: 2006, IS 2544: 2006 IEC 60383-1: 1993, IEC 60168: 1994, IEC 60433: 1997	10 kN to 400 kN, 1 kV to 100 kV(rms)
17.	**Disc/Pin/ Post/Solid Core/Hollow Insulator, Insulator Strings (All Types)**	Radio interference Voltage (Dry & Wet).	IS 8263: 2004, IS 9921: 2002, IS 12729: 2004 IEC 62271-102,	1 kV to 550 kV(rms)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Lightning Arrester Housings upto 425kV **Isolator/Circuit Breaker/Bus Duct /Cable/Bushing / Panel/Horn Gap/Dropout Fuse Unit, AB switches. 1 kV to 420 kV** **PT/ CVT Capacitors/ Grading Capacitors/ C.T - PT Units 1 kV to 420kV**		IEC 60437: 1973, IEC 60513: 1986 BSEN 60383-2: 1995, ANSI C29.1: 1992, ANSI C.29.2: 1992, ANSI C.29.5: 1994, ANSI C29.9: 1983 NEMA 197: 1987	
	Series Reactors, Line Traps. Damping Reactors Tuning Reactors Ratings to 400 kV (Inclusive)	Radio interference Voltage (Dry & Wet).		1 kV to 550 kV(rms)
	Current Transformers/H.T. Capacitors/Grading capacitor. 3.6 kV Rating to 420 kV Rating (Inclusive)	Radio interference Voltage (Dry & Wet).		1 kV to 550 kV(rms)
	Distribution Transformers Earthing transformer, Auto	Radio interference Voltage (Dry & Wet).	IS 8263: 2004, IS 9921: 2002, IS 12729: 2004 IEC 62271-102,	1 kV to 550 kV(rms)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	transformer etc. Ratings 1 kVA to 100 kVA (Inclusive). (1 kV to 22 kV Inclusive)		IEC 60437: 1973, IEC 60513: 1986 BSEN 60383-2: 1995, ANSI C29.1: 1992, ANSI C.29.2: 1992, ANSI C.29.5: 1994, ANSI C29.9: 1983	
	Lightning Arresters 1 kV to 245 kV	Radio interference Voltage (Dry & Wet)	NEMA 197: 1987	1 kV to 550 kV(rms)
	Bushings / Power Connectors, Compression Joints, Repair Sleeves Rated 145kV to 420kV	Radio interference Voltage (Dry & Wet).		1 kV to 550 kV(rms)
18.	**Disc/Pin/Post/Solid Core/ Insulator Ratings of 1 kV to 36 kV**	Mechanical Failing Load Test:	IS 731: 2006, IS 2544: 2006, IEC 60168: 2004 IEC 60383-1: 1993, IEC 60433: 1988.	10 kN to 400 kN
19.	**Disc Insulator (ball & socket, tongue and clave), long rod polymer insulators from 1 kV to 145 kV**	Mechanical performance Test	IEC 60575, RDSO 4318	10 kN to 400 kN
20.	**Polymeric insulators from 1kV to 145kV**	Damage limit proof Test.	IEC 61109: 2008, IEC 62217: 2012	10 kN to 400 kN
21.	**Polymeric insulators from 1kV to 145kV**	Assembled core load time Test	IEC 61109: 2008, IEC 62217: 2012	10 kN to 400 kN

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
22.	**C V T /Coupling Capacitors. Ratings 1 kV To 400 kV**	Discharge Test	IEC 60358: 1990, IEC 60869-5: (2004- 04)	10 kV to 2500 kV(peak)
23.	**Voltage Transformers, C.V.T., Coupling Capacitor, Rating (145 kV To 400 kV)**	Fast Transient Impulse Voltage Test/Multiple chopped Test on CT's.	IEC 60869-2: 1996 & documented procedures as per (CESI and EDF)	10 kV to 2500 kV(peak)
24.	**CVT (3.6 kV to 420 kV)**	Ferro Resonance Test	IEC 60186: 87.Amt 88	1 kV to 500 kV(rms)
25.	**CVT (3.6 kV to 420 kV)**	Short circuit withstand capability Test	IEC 60186: 87 Amt 88	1 kV to 500 kV(rms)
26.	**Test on core Material of Polymeric insulator/ Composite insulator Disc/Pin/ Post/ Insulating Materials. Ratings From 1 kV to 400 kV**	Dye penetration Test	IEC 62217: (2009-2005) , 61462: 2007	No dye shall rise through the specimens before the 15 min have elapsed
27.	**Test on core Material of Polymeric insulator/ Composite insulator Disc/Pin/ Post/ Insulating Materials. Ratings From 1 kV to 400 kV**	Water diffusion Test	IEC 62217: (2009-2005) , 61462: 2007	97 °C(water boiling temperature in Bangalore)
28.	**Test on core Material of Polymeric**	Mechanical failing load Test	IEC 60383-1: 1993	10 kN to 500 kN

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	insulator/ Composite insulator Disc/Pin/ Post/ Insulating Materials. Ratings From 1 kV to 400 kV			
29.	**Test on core Material of Polymeric insulator/ Composite insulator Disc/Pin/ Post/ Insulating Materials. Ratings From 1 kV to 400 kV**	Thermo mechanical Test	IEC 60383-1: 1993, IEC 62231: (2006-02)	10 kN to 500 kN (-)40 °C to (+)60 °C
30.	**Test on core Material of Polymeric insulator/ Composite insulator Disc/Pin/ Post/ Insulating Materials. Ratings From 1 kV to 400 kV**	Water Immersion Test	IEC 62217: (2009-2005) , IEC 61462: 2007	97 °C
31.	**Lightning arrester Blocks Ratings From 3 kV to 6 kV**	Lightning Impulse Residual Voltage Measurement	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	100 A to 45 kA 01 kV to 100 kV
32.	**Lightning arrester Blocks Ratings From 3 kV to 6 kV**	Steep Impulse Residual Voltage Measurement	IEC 60099-4 (Edition 2): 2009 IS 3070 (Part 3): 1993 (RA 2004)	5 kA to 20 kA 01 kV to 100 kV
33.	**Lightning arrester Blocks Ratings From 3 kV to 6 kV**	Switching Impulse Residual Voltage Measurement	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	50 A to 2 kA 1 kV to 100 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
34.	**Lightning arrester Blocks Ratings From 3 kV to 6 kV**	Long Duration current Impulse Withstand Test	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	75 A to 1 kA duration to 4 ms 1 kV to 100 kV
35.	**Lightning arrester units Ratings From 9kV To 400kV**	Lightning Impulse Residual Voltage Measurement	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	100 A to 10 kA (upto 400 kV) 100 A to 15 kA (upto 150 kV) 10 kV to 2500 kV
36.	**Lightning arrester units Ratings From 9kV To 400kV**	Switching Impulse Residual Voltage Measurement	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	100 A to 2 kA 10 kV to 2500 kV
37.	**Lightning arrester/unit/ block 3kV To 1200kV**	Power frequency reference Voltage Measurement	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	1 kV to 1200 kV
38.	**Lightning arrester/unit/ block 3kV To 1200kV**	Power loss Measurement	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	1 kV to 1200 kV
39.	**Lightning arrester/unit/ block 3kV To 1200kV**	Resistive leakage current Measurement	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	1 kV to 1200 kV
40.	**Lightning arrester unit Ratings From 9kV To 156kV**	Bending movement Test.	IEC 60099-4 (Edition 2): 2009, IS 3070 (Part 3): 1993 (RA 2004)	0.5 kN to 10 kN

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
VII.	**POWER SYSTEM PROTECTION RELAYS**			
1.	**Electrical Relays**	Non- Specified Time or Independent Specified Time Measuring Relays: – Accuracy Tests – errors related to the specified time – errors and variations relating to the characteristic quantity – variations relating to the specified time	IS 3231 (Part 3 /Sec I): 1987 (RA 2007) Amd. 2000	3 x 300 V rms and 300 V DC at 150 VA 3 x 30 A rms and 20 A DC at 150 VA 1 x 90 A rms and 60 A DC at 450 VA 1 x 60 A rms and 40 A DC at 300 VA 6 x 150 rms and 6 x 212 V DC at 75 VA 6 x 15 and 6 x 10 A DC at 75 VA
		Measuring Relays: – Accuracy – Tests Related To Accuracy And Operating Characteristic – Operating Time For Determining Errors – Operating Value Test – Operating Time Test – Reset Value Test – Reset Time Test	IS 3231(Part 2/Sec II): 1987 (RA 2007)	Phase angle: 0 ° to 359.9 ° lead 0° to (-)359.9 ° lag Frequency: DC to 3.5 kHz at full Power for transient playback 0.1Hz to 2kHz at full Power for continuous load 4 x 0…300 V 1 x 0…600 V 4 x 0…(±)300 V
		Impedance Measuring Relays: – Relay characteristics and performance – Operating characteristics – Resetting characteristics – Operating times – Resetting times	IS 3231(Part 3/Sec V): 1987 (RA 2007)	Freq: Sinusoidal signals: 10 kHz to 3 kHz transient signals: DC to 3.1 kHz phase angle: (-)360 ° to (+)360 ° 3 x 0…12.5 A 1 x 0…37.5 A

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrical Relays	Directional Relays And Power Relays: – Accuracy – Operating characteristics – Operating and Resetting time	IEC 60255-12: 1980 IS 3231(Part 3/Sec IV): 1987 (RA 2007)	1 x 0… ±17.5A 1 x 0… ±12.5A 3 x 0… 25 A 1 x0…75 A 1 x 0...± 35 A 1 x 0…± 25 A 0 to 90 A AC cont. 0 to 500 V 10 A DC 0.1 ms to 1526 4h (-)65 °C to 200 °C 40 % to 98 % RH Ambient temperature 20 (±)2 °C: 20 (±)5 °C, 23 (±)5 °C, 27 (±)2 °C Relative humidity 45 % to 75 %
		Baised (Percentage) Differential Relays: – Tests related to accuracy and operating characteristics – Operating characteristics – Operating time characteristics or operating time – Harmonic restraint – characteristics or Harmonic restraint – Tests of performance with through current	IEC 60255-13: 1980 IS 3231 (Part 3/Sec III): 1987 (RA 2007)	
		Thermal Relays: – Accuracy – Accuracy relating to time – Accuracy relating to operating current – Determination of errors associated current – Effect of influencing quantities on the current – Effects of correcting quantities on the current	IS 3231 (Part 2/Sec 3): 1987 (RA 2007)	3 x 300 V rms and 300 V DC at 150 VA 3 x 30 A rms and 20 A DC at 150 VA 1 x 90 A rms and 60 A DC at 450 VA 1 x 60 A rms and 40 A DC at 300 VA 6 x 150 rms and 6 x 212 V DC at 75 VA 6 x 15 and 6 x 10 A DC at 75 VA

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrical Relays	Electromechanical All Or Nothing Relays: – Functional Tests – Timing Tests – Measurement of accuracy of specified time under reference condition – Pick up – Drop out	IEC 61810-7: 2006 IS 3231 (Part 2/Sec 1): 1987 (RA 2007)	Phase angle: 0 ° to 359.9 ° lead 0° to (-)359.9 ° lag Frequency: DC to 3.5 kHz at full Power for transient playback 0.1Hz to 2kHz at full Power for continuous load 4 x 0…300 V 1 x 0…600 V
		Overload Test	IEC 61810-7: 2006	4 x 0…(±)300 V Freq: Sinusoidal signals: 10 kHz to 3 kHz transient signals: DC to 3.1 kHz phase angle: (-)360 ° to (+)360 °
		Overshoot Test/Over Shoot Time	IS 3231 (Part 2/Sec II): 1987 (RA 2007) IS 3231 (Part 3/Sec I): 1987 (RA 2007) IS 3231 (Part 3/Sec II): 1987 (RA 2007)	3 x 0…12.5 A 1 x 0…37.5 A 1 x 0… ±17.5A 1 x 0… ±12.5A 3 x 0… 25 A 1 x0…75 A 1 x 0...± 35 A 1 x 0…± 25 A 0 to 90 A AC cont. 0 to 500 V 10 A DC 0.1 ms to 1526 4h (-)65 °C to 200 °C 40 % to 98 % RH Ambient temperature 20 (±)2 °C: 20 (±)5 °C, 23 (±)5 °C, 27 (±)2 °C RH: 45 % to 75 %
2.	**Electrical Timer Relays For Industrial Purpose Part 3: Electronic**	Verification of Limits of Operation: – Verification of Resetting time – Setting Accuracy Test – Repeat Accuracy Test	IS 5834 (Part 3): 1981 (RA 2009) Amd. 1994	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**Electrical Relays**	Maximum permissible temperature Continuous and limiting temporary withstand value of input energizing quantities. Limiting short time thermal withstand value Limiting dynamic value	IS 3231 (Part 2/Sec II): 1987 (RA 2007)	Range is in addition to Sl. No. 1: 100 Ω to 100 MΩ Ambient to 65°C 0 to 9 hrs
		Rated Burden And Rated Impedance	IS 3231 (Part 2/Sec II): 1987 (RA 2007) IS 3231 (Part 3/Sec I): 1987 Amd. 2000 (RA 2007)	Range is in addition to Sl. No. 1: 0 to 10 A AC/DC 0 to 750 V AC/DC
		Mechanical Durability	IS 3231 (Part 2/Sec II) (RA 2007)	Range is in addition to Sl. No. 1: Counter to 99,999
		Contact Performance: – Making capacity – Breaking capacity – Cyclic capacity – Continuous capacity – Short time capacity – Measurements – Measurements of insulation resistance – Measurements of contact resistance	IS 12083 (Part 1): 1986 (RA 2007) IS 3231 (Part 1/Sec II): 1986 (RA 2007)	Range is in addition to Sl. No. 1: P.F.: 0.3 to unity Count 0 to 99999 100 Ω to 100 MΩ 0.0001 G to 100 GΩ 600 V AC/30 A AC/ 7500 VA Cos ϕ: 0.4 (±)0.1 500 VDC/10 A DC/500W L/R:40 ms (±)15 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	**Electrical Timer Relays**	Verification Of Rated Making And Breaking Capacities	IS 5834 (Part 3): 1981 (RA 2009) Amd. 1994	Range is in addition to Sl. No. 1: P.F.: 0.3 to unity
		Electrical Endurance	IS 5834 (Part 3): 1981 (RA 2009) Amd. 1994	Count 0 to 99999 100 Ω to 100 MΩ 0.0001 G to 100 GΩ 600 V AC/30 A AC/ 7500 VA Cos ϕ: 0.4 (±)0.1 500 VDC/10 A DC/500W L/R:40 ms (±)15 %
5.	**Electronic Timer Relays**	Temperature rise Test	IS 5834 (Part 3): 1981 (RA 2009)	Range is in addition to Sl. No. 1: 100 Ω to 100 MΩ Ambient to 65°C 0 to 9 hrs
6.	**Electronic And Electrical Items**	ENVIRONMENTAL TEST: Cold Test	IS 9000(Part 2/Sec I to IV): 1977 (RA 2007) IEC 60068-2-1: 2007 IEC 61810-7: 2006	Range is in addition to Sl. No. 1: -70 °C to ambient
		Dry heat Test	IS 9000 (Part 3/Sec I to V): 1977 (RA 2007) IEC 60068-2-2: 2007 IEC 61810-7: 2006	Range is in addition to Sl. No. 1: Ambient to 150 °C
		Damp heat Test	IS 9000 (Part 4): 2008 IEC 60068-2-78: 2012 IEC 61810-7: 2006	Range is in addition to Sl. No. 1: & (±)1.3 %RH at 40 °C 30 % to 95 % RH

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
7.	**Electrical Relays/ Electrical Timer Relays for Industrial Purpose Part 3: Electronic**	Dielectric Test/ Dielectric Voltage Test	IS 5834 (Part 3): 1981 (RA 2009) Amd. 1994 IEC 60255-27: 2013	0 to 5 kV AC/DC Leakage Current: upto 100 mA
		Impulse Voltage Test	IS 5834 (Part 3): 1981 (RA 2009) Amd. 1994 IS 12083 (Part 2): 1986 (RA 2007) IS 3231 (Part 1/Sec II): 1986 (RA 2007) IEC 60255-27: 2013	0 to 6 kV 1.2/50 μs 0.5 J
		Insulation Resistance	IS 12083 (Part 2): 1986 (RA 2007) IEC 60255-27: 2013 IS 3231(Part 1/Sec II): 1986 (RA 2007) IS 5834 (Part 3): 1981 (RA 2009) Amd. 1994	0 to 5 kV DC 0.0001 to 100 GΩ
8.	**Measuring Relays And Protection Equipments Part 151: Functional Requirements For Over/ Under Current Protection**	Determination of steady state errors relating to the characteristic quantity	IEC 60255-151: 2009	3 x 300 V rms and 300 V DC at 150 VA 3 x 30 A rms and 20 A DC at 150 VA 1 x 90 A rms and 60 A DC at 450 VA 1 x 60 A rms and 40 A DC at 300 VA 6 x 150 rms and 6 x 212 V DC at 75 VA 6 x 15 and 6 x 10 A DC at 75 VA Phase angle: 0 ° to 359.9 ° lead 0° to (-)359.9 ° lag
		Accuracy of setting (start) value		
		Reset ratio determination		
		Determination of the steady state errors related to the start and operate time		
		Determination of steady state error related to the reset time		

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Measuring Relays And Protection Equipments Part 151: Functional Requirements For Over/ Under Current Protection	Determination of transient performance Transient overreach Overshoot time Response to time varying values of the characteristic quantity for dependent time relay	IEC 60255-151: 2009	Frequency: DC to 3.5 kHz at full Power for transient playback 0.1Hz to 2kHz at full Power for continuous load 4 x 0…300 V 1 x 0…600 V 4 x 0…(±)300 V
9.	**Measuring Relays And Protection Equipments Part 127: Functional Requirements For Over/Under Voltage Protection**	Determination of steady state errors relating to the characteristic quantity Accuracy of setting (start)value Reset ratio determination Determination of the steady state errors related to the start and operate time Determination of steady state error related to the reset time Determination of transient performance Transient overreach Overshoot time for under voltage protection Response to time varying values of the characteristic quantity for dependent time relay	IEC 60255-127, 2010	Freq: Sinusoidal signals: 10 kHz to 3 kHz transient signals: DC to 3.1 kHz phase angle: (-)360 ° to (+)360 ° 3 x 0…12.5 A 1 x 0…37.5 A 1 x 0… ±17.5A 1 x 0… ±12.5A 3 x 0… 25 A 1 x0…75 A 1 x 0...± 35 A 1 x 0…± 25 A 0 to 90 A AC cont. 0 to 500 V 10 A DC 0.1 ms to 1526 4h (-)65 °C to 200 °C 40 % to 98 % RH Ambient temperature 20 (±)2 °C: 20 (±)5 °C, 23 (±)5 °C, 27 (±)2 °C Relative humidity 45 % to 75 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
10.	**Measuring Relays And Protection Equipments Part 1: Common requirements**	Burden Tests	IEC 60255-1: 2009	3 x 300 V rms and 300 V DC at 150 VA
		Burden for Voltage transformer		3 x 30 A rms and 20 A DC at 150 VA
		Burden for Current transformer		1 x 90 A rms and 60 A DC at 450 VA
		Burden for AC Power supply		1 x 60 A rms and 40 A DC at 300 VA
		Quiescent state burden		6 x 150 rms and 6 x 212 V DC at 75 VA
		Maximum load		6 x 15 and 6 x 10 A DC at 75 VA
		Inrush current and Power-up duration		Phase angle: 0 ° to 359.9 ° lead 0° to (-)359.9 ° lag Frequency: DC to 3.5 kHz at full Power for transient playback 0.1Hz to 2kHz at full Power for continuous load
		Burden for DC Power supply		4 x 0…300 V 1 x 0…600 V
		Quiescent state burden		4 x 0…(±)300 V
		Maximum load		Freq: Sinusoidal signals: 10 kHz to 3 kHz transient signals: DC to 3.1 kHz phase angle: (-)360 ° to (+)360 °
		Inrush current and Power-up duration		3 x 0…12.5 A 1 x 0…37.5 A
		Burden for Binary input		1 x 0… ±17.5A 1 x 0… ±12.5A
		Climatic Performance: General	IEC 60255-1: 2009	
		Verification procedure	IEC 60255-1: 2009	
		Functional verification procedure	IEC 60255-1: 2009	
			IEC 60255-1: 2009	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Measuring Relays And Protection Equipments Part 1: Common requirements	Protective bonding continuity-Routine Test	IEC 60255-27: 2013	3 x 0… 25 A 1 x0…75 A 1 x 0...± 35 A 1 x 0…± 25 A 0 to 90 A AC cont. 0 to 500 V 10 A DC 0.1 ms to 1526 4h (-)65 °C to 200 °C 40 % to 98 % RH Ambient temperature 20 (±)2 °C: 20 (±)5 °C, 23 (±)5 °C, 27 (±)2 °C Relative humidity 45 % to 75 %
		Protective bonding resistance – type Test	IEC 60255-1: 2009	Range is in addition to above: 100 Ω to 100 MΩ Ambient to 65°C 0 to 9 hrs
		Contact performance Mechanical endurance Limited making capacity Contact current Limited breaking capacity	IEC 60255-1: 2009	Range is in addition to above: P.F.: 0.3 to unity Count 0-99999 100Ω-100MΩ 0.0001 G to 100 GΩ 600 V AC/30 A AC/ 7500 VA Cos ϕ: 0.4 (±)0.1 500 V DC/10 A DC/ 500 W L/R:40 ms (±)15 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Measuring Relays And Protection Equipments Part 1: Common requirements	Measurement of insulation resistance	IEC 60255-1: 2009	0 to 5 kV AC/DC Leakage Current: upto 100 mA
		Dielectric type Test	IEC 60255-1: 2009	0 to 5 kV AC/DC Leakage Current: upto 100 mA
		Climatic Environmental Tests:		
		Dry heat Test-Operational	IEC 60068-2-2: 2007	Ambient to 150°C
		Cold Test – Operational	IEC 60068-2-1: 2007	-70°C to Ambient
		Dry heat at maximum storage temperature	IEC 60068-2-2: 2007	150°C
		Cold Test at minimum storage temperature	IEC 60068-2-1: 2007	-70°C
		Change of temperature Test	IEC 60068-2-14: 2009	-70°C to 150°C
		Damp heat steady state Tests	IEC 60068-2-78: 2012	Ambient to 150°C& RH:30% to 95%
		Cyclic temperature with humidity Test	IEC 60068-2-30: 2005	Ambient to 150°C& RH:30% to 95%

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
11.	**Measuring Relays And Protection Equipments Part 121: Functional requirements for Distance Protection**	Functional Tests: General Rated frequency characteristic accuracy Tests: General Basic characteristic accuracy under steady state conditions Basic directional accuracy under steady state conditions Determination of accuracy related to time delay setting Determination and reporting of the disengaging time Dynamic performance: General Dynamic performance: operate time and transient overreach (SIR diagrams) Dynamic performance: operate time and transient overreach (CVT-SIR diagrams) Dynamic performance: transient overreach Tests Dynamic performance: typical operate time	IEC 60255-121: 2014	3 x 300 V rms and 300 V DC at 150 VA 3 x 30 A rms and 20 A DC at 150 VA 1 x 90 A rms and 60 A DC at 450 VA 1 x 60 A rms and 40 A DC at 300 VA 6 x 150 rms and 6 x 212 V DC at 75 VA 6 x 15 and 6 x 10 A DC at 75 VA Phase angle: 0 ° to 359.9 ° lead 0° to (-)359.9 ° lag Frequency: DC to 3.5 kHz at full Power for transient playback 0.1Hz to 2kHz at full Power for continuous load 4 x 0…300 V 1 x 0…600 V 4 x 0…(±)300 V Freq: Sinusoidal signals: 10 kHz to 3 kHz transient signals: DC to 3.1 kHz phase angle: (-)360 ° to (+)360 ° 3 x 0…12.5 A 1 x 0…37.5 A 1 x 0… ±17.5A 1 x 0… ±12.5A

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Measuring Relays And Protection Equipments Part 121: Functional requirements for Distance Protection	Performance with harmonics Steady state harmonics Tests Transient oscillation Tests (network simulation L-C) Performance during off-nominal frequency Steady state frequency deviation Tests Transient frequency deviation Double infeed Tests Double infeed Tests for single line Double infeed Tests parallel	IEC 60255-121: 2014	3 x 0… 25 A 1 x0…75 A 1 x 0...± 35 A 1 x 0…± 25 A 0 to 90 A AC cont. 0 to 500 V 10 A DC 0.1 ms to 1526 4h (-)65 °C to 200 °C 40 % to 98 % RH Ambient temperature 20 (±)2 °C: 20 (±)5 °C, 23 (±)5 °C, 27 (±)2 °C Relative humidity 45 % to 75 %
VIII.	**SHORT-CIRCUIT TEST FACILITY**			
1.	**Circuit breakers**	Short circuit making & breaking capacity Making and breaking capacities Operating limits Operational performance	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 2): 2003 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 2): (2013-01)	10 A to 50 kA a.c (r.m.s) at 460 V 1 A to 30 kA d.c. at 800 V
	Switches Disconnectors Switch Disconnector & Fuse Combination units	Temperature rise	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 3) : 1999 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 3): (2012-07)	1 A to 1000 A a.c (Single phase)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Contactors & Motor Starters	Dielectric-properties Degree of protection of enclosed equipment Routine & Sampling Tests	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 4)-1: 2000 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 4)-1: (2012-07)	0 to 100 kV a.c.
	Control circuit Devices & Switching Elements		IS/IEC 60947 (Part 1): 2007 & (Part 5)-1 : 2003) IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 5)-1: 2009	0 to 100 kV a.c
2.	**Circuit breakers**	Short time current Test	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 2): 2003 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 2): (2013-01)	10 A to 50 kA a.c (r.m.s) for 1.0 s 10 A to 30 kA a.c (r.m.s) for 3.0 s 1 A to 30 kA d.c for 3.0 s
	Switches Disconnectors Switch disconnector & fuse combination units		IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 3): 1999 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 3): (2012-07)	
	Contactors & motor starters		IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 4)-1 : 2000 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 4)-1: (2012-07)	
	Control circuit devices & switching elements		IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 5)-1: 2003 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 5)-1: 2009	
	Instrument transformer		IEC 61869-1: (2007-10) IEC 61869-2: (2012-09) IS 8084: 1976 (RA 2002)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Inter connection busbar for ac Voltage 1 kV to 36 kV	Protection against Electric shock and integrity of protective circuits	IS 8623 : 1993 (RA 2004) IEC 61439-1: 2011 IEC 61439-2: 2011	100 A to 30 kA a.c (r.m.s) for 1.0 s 100 A to 50 kA rms for 0.5 s @ 460 V
	Low Voltage switchgear & controlgear assemblies	Short time current tes Internal arc Test Short time current	IEC 61439-6: 2012 IEC/TR 61641 IEEE 495: 2007	100 A to 40 kA rms for 1.0 s & 30 kA for 3.0s 100 A to 30 kA a.c (r.m.s) for 3.0 s
	Fault passage indicator	Short time current Test	IS 9921: 1981 (RA 2002) IEC 62271-102: (2013-02) IS/IEC 62271-102: 2003	(Upto 33 kV rating)
	Alternating current disconnector(isolator) & earthing switch for Voltages above 1 kV		IS 9920: Part 1: 2002 IEC 62271- 200: 2011 IS/IEC 62271- 200: 2003	100 A to 30 kA a.c (r.m.s) for 3.0 s (to 33 kV rating) .
	Switches & switch isolator for Voltages above 1 kV		IS 5561: 1970 (RA 2002) IEC 61238-1: (2003-05)	100 A to 45 kA a.c (r.m.s) for 1.0 s 100 A to 30 kA a.c (r.m.s) for 3.0 s
	Electric Power connectors **Compression & mechanical connector for Power Cables**		IS 8468 : 1977 (RA 2006) IEC 60214-1: 2003	10 A to 45 kA a.c (r.m.s) for 1.0 s
	On load tap changers		IEC 62271-100: 2012-09	10 A to 30 kA a.c (r.m.s) for 3.0 s
	High Voltage alternating current circuit breakers		IS 13118: 1991 (RA 2002) IS 5553 : 1989 (RA 2006) IEC 60076-6: 2007	100 A to 30 kA a.c (r.m.s) for 3.0 s (to 33 kV rating)
	Reactor	Transition impedance Test	IEC 60214-1	10 A to 2 kA a.c(r.m.s) for 3.0 s at 12 kV rating
	OLTC transition resistor	Short time current Test	IEC 62053-22: 2003	10 A to 5 kA a.c(r.m.s) at 2 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	AC static watt hour meters for active energy (classes 0.2S & 0.5 S)		IEC 62052-11: 2003 IS 14697 : 1999 (RA 2004) IS 13779: 1999 (RA 2006) IEC 62053-21: 2003 IEC 62052-11: 2003	100 A to 75 kA a.c (peak) 100 A to 35 kA a.c. rms for 1.0
	AC static watt hour meters class 1.0 & 2.0 **AC watt hour meters class 0.5, 1.0 & 2.0**		IS 13010: 2002 IEC 62053-11: 2003 IEC 62052-11: 2003 CBIP TR 88, 1996	10 A to 50 kA a.c (r.m.s) for 1.0 s 10 A to 30 kA a.c (r.m.s) for 3.0 s
	AC Static Electrical Energy Meters		IS 13573 (Part 1): 2011 IS 13573(Part 2): 2011 IS 13573(Part 3): 2011	10 A to 50 kA a.c (r.m.s) for 1.0 s 10 A to 30 kA a.c (r.m.s) for 3.0 s
	Joints & Terminations of Polymeric Cables for 6.6 kV to33 kV **AC metal enclosed switchgear and control gear for Rated Voltages above 1 kV and to 52 kV**		IEC 60502-4: 2010 IEC 61442: 2005 IEC 62271: 200: 2011 IS 3427: 1997 (RA 2002) IS/IEC 62271-200: 2003 IEC 62271-202: (2014-03)	10 A to 50 kA a.c (r.m.s) for 1.0 s 10 A to 30 kA a.c (r.m.s) for 3.0 s 0 A to 50 kA a.c (r.m.s) for 1.0 s 10 A to 30 kA a.c (r.m.s) for 3.0 s
	High-Voltage/low-Voltage prefabricated sub-station **Switchgear and control gear for Voltages exceeding 1000 V**		IS/IEC 62271-200: 2003 IS/IEC 62271-1: 2007 IEC 62271-201: (2014-03)	0 A to 50 kA a.c (r.m.s) for 1.0 s 10 A to 30 kA a.c (r.m.s) for 3.0 s 0 A to 50 kA a.c (r.m.s) for 1.0 s 10 A to 30 kA a.c (r.m.s) for 3.0 s

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	AC insulation enclosed switchgear and control gear for 1 kV to 52 kV			
3.	**Current transformer**	Short time current Test Temperature rise Test Accuracy Test Instrument security current Current error & phase displacement Composite error Knee point Voltage & exciting current Test Secondary winding resistance Turns ratio Over-Voltage inter –turn Tests Power frequency dry withstand Tests on primary and secondary windings	IS 2705: 1992 (RA 2002) IEC 61869-1: (2007-10) IEC 61869-2: (2012-09) IS 6949: 1973 (RA 2001)	100 A to 45 kA a.c (r.m.s) for 1.0 s 100 A to 30 kA a.c (r.m.s) for 3.0 s Upto 400 kV 100V to 100 kV a.c
4.	**Circuit breakers**	Overload performance	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 2): 2003 IEC 60947 (Part 1): (2011-03) & IEC 60947 (Part 2): 2009	10 A to 5 kA a.c.(r.m.s) at 800 V 10 A to 5 kA d.c at 800 V
5.	**Circuit breakers**	Electrical durability Electrical & Mechanical endurance	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 2) : 2003 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 2): (2013-01)	1 A to 800 A, 660 V
	Switche Disconnector Switch disconnector & fuse combination units		IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 3) : 2003 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 3): (2012-04)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Contactors & motor starters		IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 4)-1: 2000 IEC 60947 (Part 1): (2014-09) & (Part 4)-1: (2012-07)	
	Control circuit devices & switching elements	Electrical durability Electrical & Mechanical endurance	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 5)-1: 2003 IEC 60947 (Part 1): (2014-09) & IEC 60947 (Part 5)-1: (2009-04)	1 A to 800 A, 660 V
	Composite units of air break switches and Rewireable type fuses for Voltages not exceeding 650 V a.c.		IS 10027: 2000	
6.	**Low Voltage fuses for Voltages not exceeding 1000 V a.c. or 1500 V d.c**	Short circuit breaking capacity Dimensions Insulating properties Temperature rise Power acceptance	IS 13703: 1993 (RA 2004)	10 A to 50 kA a.c.(r.m.s) at 460 V 1 A to 30 kA d.c at 800 V 1 A to 1000 A, a.c 10 μΩ to 10 mΩ
	D-type fuses	Degree of protection Resistance to heat	IS 8187: 1976 (RA 2006)	10 mΩ to 2000 Ω
	Low Voltage fuses	Resistance to rusting Freedom from season cracking	IEC 60269-1: (2014-06)	
	Cartridge fuses for Voltage upto 1000 V a.c. and 1500 V d.c.	Resistance Conventional non-fusing current Rated current time characteristics	BS 88: 1988	
	Miniature fuses carriers & bases used in rewirable type Electrical fuses for Voltages upto 650 V	Cut-off current characteristics Non-deterioration of contacts Mechanical strength	IEC 60127-1: 2006	
			IS 10027: 2000	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Composite units of air break switches and rewireable type fuses for Voltages not exceeding 650 V a.c. AC Miniature circuit breaker boards for Voltage not exceeding 1 kV	Short circuit breaking capacity	IS 13032: 1991 (RA 2001)	10 A to 50 kA a.c.(r.m.s) at 460 V
		Dimensions		
		Insulating properties		1 A to 30 kA d.c at 800 V
		Temperature rise		1 A to 1000 A, a.c
		Power acceptance		10 μΩ to 10 mΩ
		Degree of protection	IS 5039: 1983 (RA 2001)	10 mΩ to 2000 Ω
	Distribution pillars for Voltages not exceeding 1000 V AC and 1200 V DC	Resistance to heat		
		Resistance to rusting		
		Freedom from season cracking		
		Resistance		
	Enclosed distribution fuse boards and cutouts for Voltages not exceeding 1000 V AC and 1200 V DC	Conventional non-fusing current	IS 2675: 1983 (RA 2001)	
		Rated current time characteristics		
		Cut-off current characteristics		
		Non-deterioration of contacts		
		Mechanical strength		
7.	**Electrical Accessories-circuit breakers for over current protection for household and similar installations**	Short circuit capacity Marking	IS/IEC 60898-1: 2002	10 A to 25 kA a.c (r.m.s) at 440 V
		General	IS/IEC 60898-2: 2003	
		Mechanism	IEC 60898-1: 2003	1 A to 30 kA d.c at 800 V
		Clearance & creepage distances	IEC 60898-2 : 2003	
		Non-interchangeability		
		Indelibility of marking		
		Reliability of screws, current carrying parts and connections	IEC 60934: 2013-01	
	Circuit breakers for equipment(CBE)	Reliability of terminals for external conductors		
		Protection against Electric shock		
		Dielectric properties		100 V to 100 kV a.c

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Residual current – operated circuit breakers	Temperature rise 28-day Test Tripping characteristics Mechanical and Electrical endurance Resistance to mechanical shock and impact Resistance to heat Resistance to abnormal heat and to Fire Resistance to rusting Rusting		1 A to 1000 A a.c.
		Marking	IS 12640 (Part 1): 2008	
		General	IS 12640 (Part 2): 2008	
		Mechanism	IEC 60755: 2008	
		Clearance and creepage distances	IEC 61008-1: (2013-09)	
		Indelibility of marking	IEC 61008-2-1: 1990	0 to 200 mm
		Reliability of screws, current carrying parts and connections	IEC 61008-2-2: 1990	
		Reliability of terminals for external conductors	IEC 61009-1: 2013	
		Protection against Electric shock	IEC 61009-2-1: 1991	
		Dielectric properties	IEC 61009-2-2: 1991	
		Temperature rise	IS 12640 (Part 1): 2008	
		Operating characteristic	IS 12640 (Part 2): 2008	Up to 5 kV Up to 200 A
		Mechanical and Electrical endurance	IEC 60755: 1983	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Behaviour of RCCBs under short-circuit conditions	IEC 61008-1: 2010	1A to 400 A @ 460 V 1 A to 10 kA @ 500 V
		Resistance to mechanical shock and impact	IEC 61008-2-1: 1990	
		Resistance to heat	IEC 61008-2-2: 1990	
		Resistance to abnormal heat and to Fire	IEC 61009-1: 2010	
		Trip-free mechanism	IEC 61009-2-1: 1991	
		Operation of the Test device at the limits of Rated Voltage	IEC 61009-2-2: 1991	
		Behaviour of RCCBs in case of failure of the line Voltage for RCCBs		
		Limiting values of the non-operating current under over current conditions		
		Resistance against unwanted tripping due to current surges		
		Resistance of the insulation against an impulse Voltage		
		Behaviour of RCCBs in case of an earth fault current comprising of d.c. component		
		Reliability		
		Ageing of electronic components		
8.	**Switches Disconnectors Switch disconnector & fuse combination units**	Rated fused short circuit current Test	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 3): 1999 IEC 60947 (Part 1): (2011-03) & (Part 3): (2008-08)	10 A to 50 kA a.c(r.m.s) at 460 V 1 A to 30 kA d.c at 800 V
	Composite units of air break switches and rewireable type	Voltage ratio and check of Voltage vector relationship	IS 10027: 2000	0 to 2000

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	fuses for Voltages not exceeding 650 V a.c.	impedance Voltage/short circuit Impedance (principal tapping) and load loss	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 3): 1999 IEC 60947 (Part 1): (2011-03) & (Part 3): (2008-08)	0 to 100A 0 to 1000V 0 to 10 kW
	Switches Disconnectors	no-load loss and current		0 to 20A
	Switch disconnector & fuse combination units	insulation resistance	IS 60947 (Part 1): 2007 & IS 60947 (Part 3): 1999 IEC 60947 (Part 1): (2011-03) & (Part 3): (2008-08)	0 to 1000GΩ
	Composite units of air break switches and rewireable type fuses for Voltages not exceeding 650 V a.c.	Dielectric Tests	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 3): 1999 IEC 60947 (Part 1): (2011-03) & (Part 3): (2008-08) IEC 60076-3 : 2013	100V to 100 kV
		Temperature rise Test exceeding rise test exceeding 650 V	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 3): 1999 IEC 60947 (Part 1): (2011-03) & (Part 3): (2008-08) IEC 60076-2 : 2011	Upto 2.5 MVA
9.	**Power transformers Distribution transformers (Non Sealed & Sealed) Dry type Power transformers Control Transformers**	Measurement of winding resistance	IS 2026-1: 2011 IS 2026-2: 2010 IS 2026-3: 2009 IS 2026-4: 1977 (RA 2001) IS 2026-5: 2011 IEC 60076-1: 2011 IEC 60076-2: 2011 IEC 60076-3: (2013-07) IEC 60076-5: 2006 IEC 60076-11: 2004 IS 1180-1: 2014 IS 11171: 1985 (RA 2006) IS 12021: 1987(RA 2005)	Upto 2500 kVA 10 μΩ to 10 mΩ 10 mΩ to 2000 Ω

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				0 to 1000 V, 50 Hz to 200 Hz
	Power transformers **Distribution transformers (Non Sealed & Sealed)** **Dry type Power transformers** **Control Transformers**	Induced over Voltage withstand Test	IS 2026-1: 2011 IS 2026-2: 2010 IS 2026-3: 2009 IS 2026-4: 1977 (RA 2001) IS 2026-5: 2011 IEC 60076-1: 2011 IEC 60076-2: 2011 IEC 60076-3: (2013-07) IEC 60076-5: 2006 IEC 60076-11: 2004 IS 1180-1: 2014 IS 11171: 1985 (RA 2006) IS 12021: 1987(RA 2005)	
		Short circuit Tests	IS 2026-1: 2011 IS 2026-2: 2010 IS 2026-3: 2009 IS 2026-4: 1977 (RA 2001) IS 2026-5: 2011 IEC 60076-1: 2011 IEC 60076-2: 2011 IEC 60076-3: (2013-07) IEC 60076-5: 2006 IEC 60076-11: 2004 IS 1180-1: 2014 IS 11171: 1985 (RA 2006) IS 12021: 1987(RA 2005) (IEC 60076-5: 2006) IEEE Std C57.12.90™: 2010 IEEE Std C57.12.20™: 2011	0 to 1000 V, 50 Hz to 200 Hz Upto 1000 kVA

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEEE Std C57.12.00™: 2010	
	Power transformers	Permissible flux density & overfluxing	IS 1180-1: 2014	Upto 2500 kVA
	Distribution transformers (Non Sealed & Sealed)	Pressure Test	IS 1180-1: 2014	Upto 2500 kVA
		Oil leakage Test	IS 1180-1: 2014	Upto 2500 kVA
	Dry type Power transformers	Paint adhesion Test	IS 1180-1: 2014	Upto 2500 kVA
	Control Transformers	Determination of sound levels	IS 2026-1: 2011 IEC 60076-10: 2001 IEEE Std C57.12.90™: 2010	20 dB to 140 dB
10.	**Arrester Disconnector**	Time versus current curve	IEC 60099-4: 2014 IS 3070 (Part 3): 1993 (RA 2004)	10 A to 1000 A / 3.3 kV
11.	**Switches Disconnectors Switch disconector & fuse combination units**	Rated making and breaking capacity Test	IS/IEC 60947 (Part 1): 2004 & IS/IEC 60947 (Part 3) : 1999 IEC 60947 (Part 1): (2011-03) & IEC 60947 (Part 3): (2008-08)	10 A to 4 kA a.c. at 460 V 1 A to 4 kA d.c. at 800 V
	Contactors & motor starters		IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 4)-1 : 2000 IEC 60947 (Part 1): (2011-03) & (Part 4)-1: (2009-09)	
	Control circuit devices & switching elements		IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 5)-1: 2003 IEC 60947 (Part 1): (2011-03) & IEC 60947 (Part 5)-1: (2009-04)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Composite units of air break switches and rewireable type fuses for Voltages not exceeding 650 V a.c.		IS 10027: 2000	
12.	**Voltage transformer**	Short time current Tests Accuracy Test	IS 3156: 1992 (RA 2002) IEC 61869-1: (2007-10) IEC 61869-3: (2011-07)	Upto 11 kV, Single Phase Upto 36 kV, Single Phase
		Dielectric Test		100 V to 100 kV
13.	**Low Voltage switch gear & control gear Control circuit devices & switching elements**	Impulse Voltage Test	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 5)-1: 2003 IEC 60947 (Part 1): 2011 & IEC 60947 (Part 5)-1: 2009	1 kV to 35 kV, 1.2/50 µs
	Low Voltage switch gear & control gear assemblies	Impulse Voltage Test	IS 8623: 1993 (RA 2004) IEC 60439-1: 2004 IEC 60439-2: 2005 IEC 61439-1: 2011	1 kV to 35 kV, 1.2/50 µs
	Capacitor		IS 13340: 1993 (RA 2003) IS 13585-1: 1994 (RA 2004)	
	AC static watt hour meters for active energy (classes 0.2S & 0.5 S)		IEC 62053-22: 2003 IEC 62052-11: 2003 IS 14697: 1999 (RA 2004)	
	AC static watt hour meters class 1.0 & 2.0		IEC 62053-21: 2003 IEC 62052-11: 2003 IS 13779: 1999 (RA 2006)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	AC watt hour meters class 0.5, 1.0 & 2.0 AC Static Electrical Energy Meters		IS 13010: 2002 (RA 2009) IEC 62053-11: 2003 IEC 62052-11: 2003 CBIP TR 88: 1996	
14.	**Low Voltage switchgear & control gear Control circuit devices & switching elements Low Voltage fuses for Voltages not exceeding 1000 V a.c. or 1500 V d.c.**	Temperature rise Test	IS/IEC 60947 (Part 1): 2007 & IS/IEC 60947 (Part 5)-1: 2003 IEC 60947 (Part 1): (2011-03) & IEC 60947 (Part 5)-1: (2009-04) IS 13703 (Part 1 to 4): 1993 (RA 2004) IEC 60269-1 (Part 1 to 4): 2009	1 A to 1250 A a.c. single phase
	Voltage transformer		IS 3156 (Part 1 to 4): 1992 (RA 2002) IEC 61869-3: (2011-07)	
	Current transformer Instrument transformer	Temperature rise Test	IS 2705: 1992 (RA 2002) IEC 61869-1: (2007-10) IEC 61869-2: (2012-09)	1 A to 1250 A a.c. single phase
	Electrical Power connectors		IS 5561: 1970 (RA 2002)	
	11 kV Horn gap fuse		IS 9385-2: 1980 (RA 2002) IEC 60282-2: 2008	
15.	**AC static watthour meters for active energy (classes 0.2S & 0.5 S)**	Resistance to Heat & Fire	IEC 62053-22: 2003 IEC 62052-11: 2003 IS 14697: 1999 (RA 2004)	20 °C to 960 °C
	AC static watthour meters class 1.0 & 2.0		IS 13779 : 1999 (RA 2006) IEC 62053-21: 2003	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 62052-11: 2003	
	AC watthour meters class 0.5, 1.0 & 2.0 AC Static Electrical Energy Meters	Resistance to Heat & Fire	IS 13010: 2002(RA 2009) IEC 62053-11: 2003 IEC 62052-11: 2003 CBIP TR 88: 1996	20 °C to 960 °C
	Low-Voltage fuses		IEC 60269-1: 2006 IS 13703: 1993 (RA 2004)	
	End Products		IS 11000 (Part 2/Sec 1): 2008 IEC 60695-2-10: 2000 IEC 60695-2-11: 2000	
	Materials	Glow wire Flammability Test	IS 11000 (Part 2/Sec 1): 2008 IEC 60695-2-12: 2010	
16.	**Low-Voltage switchgear and controlgear assemblies**	Clearance and creepage distances	IEC 61439-1: 2011 IEC 61439-6: 2012	100 V to 100 kV
		Dielectric properties	IEC 60664-1: 2007 IEC 61180-1: 1992	20 °C to 150 °C 45 % to 99 % RH
		Resistance to corrosion	IEC 61180-2: 1994 IEC 60068-2-30: 2005 IEC 60068-2-11: 1999 ISO 4628-3: 2003	
		Properties of Insulating Materials	IEC 60068-2-2: 2007 IEC 60695-2-10: 2000	
		Lifting Marking Mechanical impact	IEC 60695-2-11: 2000 IEC 62262: 2002 IEC 60068-2-75: 1997	
		Ability to withstand mechanical loads	IEC 61439-6: 2012	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
17.	**Electric Power connectors**	Resistance Test	IS 5561: 1970 (RA 2002)	10 μΩ to 10 mΩ 10 mΩ to 2000 Ω
18.	**Terminal blocks for copper conductors**	Short time withstand current Temperature-rise Test Test of mechanical strength of clamping units Flexion Test Pull-out Test Verification of clearances and creepage distances Dielectric Test Verification of the Voltage drop Ageing Test for screwless-type terminal blocks	IEC 60947-7-1: 2009	100 A to 50 kA a.c(r.m.s) at 460 V 1 kA to 30 kA d.c. at 800 V 10 A to 1000 A a.c. 500 V to 100 kV a.c.
19.	**High Voltage Test facility**	Impulse Voltage Dielectric Test	IS 2071: 1993 (RA 2006) IEC 60060-1: 2010 IEC 60060-2: 2010	1 kV to 35 kV, 1.2/50 μs Upto 100 kV ac
20.	**Short circuit Test facility**	LV Switchgear and controlgear: Part 1 General rules	IS/IEC 60947 (Part 1): 2007 IEC 60947-1: 2011	10 A to 50kA a.c (r.m.s) at 460 V 1 A to 30kA d.c. at 800 V
21.	**EMI / EMC Test facility**	Testing & measurement techniques Surge immunity Test Oscillatory wave immunity Test / Ring wave Test	IEC 61000-4-5: 2005 IS 14700 (Part 4/Sec V): 2012 IEC 61000-4-12: 2006 IS 14700 (Part 4/Sec XII): 2008	3.3 kA 8/20 μS, 6.6 kV 1/50 μS 0 to 500 A/0.5μs, 100 kHz

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
22.	**Environmental Test facility**	Cold Test	IS 9000 (Part 2): 1977 (RA 2004)	20 °C to 150 °C 45 % to 99 % RH
		Dry Heat Test	IS 9000 (Part 3): 1977 (RA 2004)	
		Damp Heat (Cyclic) Test	IEC 60068-3-1: 2011	
	Environmental Test facility	Damp Heat (Steady State) Test	IEC 60068-2-2: 2007	
		Salt mist Test	IS 9000 (Part 5): 1981	
		Glow wire	IEC 60068-2-30: 2005	Upto 960 °C
		Ball pressure Test	IS 9000 (Part 4): 2008 (RA 2004)	
		Hammer Test	IEC 60068-2-66: 1994 IEC 60068-2-11: 1999 ISO 4628-3: 2003 IS 11000 (Part 2/Sec 1): 2008 IEC 60695-2-10: 2000 IEC 60695-2-11: 2000 IEC 60695-10-2: 2003 IEC 60068-2-75: 1997	
IX.	**BATTERIES**			
1.	**Stationary Lead-Acid Batteries (With Tubular positive Plates) in Monoblock container**	Verification of constructional requirements (Cl.11.2) Verification of marking (Cl.11.4) Verification of dimensions (Cl.11.4) Test for capacity (Cl.11.5) Ampere-hour and watt-hour efficiency tests (Cl.11.8)	IS 13369: 1992 (RA 2002)	Battery capacity: 0 to18 V, 0 to 50 A 0 to 500 Ah rating

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Test for loss of capacity on storage (Cl.11.6)		
2.	**Stationary cells and Batteries, Lead-Acid type (With Tubular positive Plates)**	Verification of constructional requirements (Cl.12.2) Verification of marking (Cl.12.3) Verification of dimensions (Cl.12.4) Test for capacity (Cl.12.5) Test for voltage during discharge (Cl.12.10) Ampere-hour and watt-hour efficiency tests (Cl.12.9) Test for loss of capacity on storage (Cl.12.7)	IS 1651: 2013	Battery capacity: 0 to18 V 0 to 50 A 0 to 500 Ah rating
3.	**Stationary cells and Batteries, Lead-Acid type With Plante positive Plates**	Verification of constructional requirements (Cl. 5) Verification of marking (Cl. 7) Verification of dimensions (Cl.6.1) Test for capacity (Cl. 10.6) Test for voltage during discharge (Cl. 10.11) Ampere-hour and watt-hour efficiency tests(Cl.10.10) Test for loss of capacity on storage (Cl. 10.8)	IS 1652: 2013	Battery capacity: 0 to18 V 0 to 50 A 0 to 500 Ah rating
4.	**Stationary Valve regulated Lead-Acid Batteries**	Visual examination (Cl. 4.1 to 4.9 and 8.1)	IS 15549: 2005	Battery capacity: 0 to18 V 0 to 50 A

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Checking of dimensions as per manufacturer's drawing Test for capacity (Cl. 12.1) Test for voltage during discharge (Cl. 10.11) Ampere-hour (Cl.12.4) & watt-hour efficiency tests (Cl.12.5) Retention of charge (Cl. 12.6)		0 to 500 Ah rating
5.	**Lead-Acid Storage Batteries for Motor Vehicles**	Physical examination (Cl. 9.3) Dimensions and Layout (Cl. 9.4) Marking (Cl. 9.5) Test for capacity (Cl. 9.7) High rate discharge at normal temperature (Cl. 9.9) Retention of charge (Cl. 9.12)	IS 7372: 1995 (RA 2002)	Battery capacity: 0 to18 V 0 to 50 A 0 to 500 Ah rating
X.	**WIRING ACCESSORIES**			
1.	**Electric Ceiling Fan and Regulators**	Air Delivery (Cl 10.3) Temperature Rise (Cl 10.4) Leakage Current (Cl 10.5) High voltage (Cl 10.6) Insulation resistance (Cl 10.7) Starting (Cl 10.8) Fan speed and input (Cl 10.9) Earthing connections (Cl 10.10) Protection against electric shock (for regulators only) (Cl 10.11) Moisture resistance(for regulator only) (Cl 10.12)	IS 374: 1979 (RA 2007)	0.2 m/s to 8 m/s Upto 400°C ± 2°C 0 to 2 mA 0 to 5 kV 0 to 20 GΩ 5 rpm to 9999 rpm, 0 to 5 kW 0 to 30 A, 0 to 30 V 0 to 40 V 60 %Rh to 95 %Rh 0 to 100 °C

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Mechanical strength (for regulators only) (Cl 10.13)		0.5± 0.05 Nm
		Suspension system (Cl 10.14)		0 to 1000 g
		creep age distance and		0 to 500 kgcm
		Clearance (Cl 10.15)		0 to 200 mm
		Mechanical endurance (for Regulator only) (Cl 10.16)		999.99 operations at 6 operations/min
2.	**Electrical table type fans and regulators**	Air Delivery (Cl 10.3)	IS 555: 1979 (RA 2005)	0.2 m/s to 8 m/s
		Temperature Rise (Cl 10.4)		Upto 400°C ± 2°C
		Leakage Current (Cl 10.5)		0 to 2 mA
		High voltage (Cl 10.6)		0 to 5 kV
		Insulation resistance(Cl.10.7.1)		0 to 20 GΩ
		Starting (Cl 10.8)		
		Fan speed and input (Cl 10.9)		5 rpm to 9999 rpm,
		Earthing connections (Cl 10.10)		0 to 5 kW 0 to 30 A, 0 to 30 V
		Protection against electric shock (Cl 10.11)		0 to 40 V
		Moisture resistance (Cl 10.12)		60 %Rh to 95 %Rh
		Mechanical strength (for regulators only) (Cl 10.13)		0 to 100 °C
		Cord grip (Cl 10.14)		999.99 operations at 6 operations/min
		Creep age distances and Clearance (Cl 10.16)		0 to 200 mm 0 to 100 kgf
		Oscillating mechanism (Cl 10.15)		0 to 3.5 kgf/ cm
XI.	**DOMESTIC ELECTRICAL APPLIANCES**			
1.	**All types of electrical equipment,**	Ingress protection test which includes first numeral degree of	IS/IEC 60529, Edn 2.1- (2001) IEC: 600529 Edn 2.2 (2013-08)	IP1X to IP 6X and IPX1 to IP X8

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	enclosures, Such as outdoor distribution boards. Relay units /panels. Control cubicles for PCVCB, switching and Control System Enclosures, RMV Panels, HT metering and switching panels, AC Distribution Board, EWM Enclosure, Platform power supply, LT Panel, disconnecting switch assembly Condulate, Junction Boxes, LV Switch Board, AC/DC Panel, Weatherproof switch Enclosure, Dry Type Transformer Enclosure, PCC Panel. MCC Panel, Bus Ducts, DOL Starter, Integral Starter, Control Panels, Electricity metering equipment enclosures, Actuators, Telecom equipt enclosures, Antennas, Cables, Connector Assembly, GPRS Equipment	protection from IP 1X to IP 6X tests and second numeral degree of protection from IPX1 to IP X8 tests, Insulation Resistance and Power Frequency AC High Voltages Withstand / functional / Performance tests and Drawings / Dimensional verifications	IS/IEC 60947-1:2007 IEC:61439 -1, Edn 2.0 (2011-08) IS13779: 1999 (RA 2004) IS 14679: 1999 (RA2004) IS 13010: 2002 IEC 62052-11First Edition 2003-02 IS/IEC 60529, Edn 2.1- (2001) IEC: 600529 Edn 2.2 (2013-08) IS/IEC 60947-1:2007 IEC:61439 -1, Edn 2.0 (2011-08) IS13779: 1999 (RA 2004) IS 14679: 1999 (RA2004) IS 13010: 2002 IEC 62052-11First Edition 2003-02	i.e. IP 11 TO IP 68 IP1X to IP 6X and IPX1 to IP X8 i.e. IP 11 TO IP 68

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	enclosures, Battery charge Panels, Medical Health Monitoring Equipment enclosures, Drive Mechanism Box, Marshalling Kiosks, Surge monitors, MOMs, Belt sway switch enclosures, Reactor Assembly enclosures, Starter Motors, Soft starters Panels, RAPCONS, BAPCONS			
2.	**All Types of rotating electrical machinery equipment's, enclosures, Such as enclosures of induction Motor, Wall Actuators, DC Machines, AC Machines, Alternators, Generators, Vibratory Electric Motors, Large Motors, Automobile Electrical Motors, Traction Motors, Power Tools Motors, Pumps (Motors)**	Ingress Protection tests which includes first numeral degree of protection from IP 1X to IP 6X tests and second numeral degree of protection from IPX1 to IP X8 tests, Electrical tests / No load run tests / Functional / Performance Tests and Drawings / Dimensional verifications	IS/IEC 60034-5: 2000 IEC 60034-5 Edn, 4.1 (2006-11)	IP1X to IP6X and IPX1 to IPX8 (IP11 to IP68)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**All type of luminaries and lighting fitting equipment enclosures Such as Street Light Fitting Enclosures, Aviation Lights fitting Enclosures, Domestic and Industrial Light Fitting Enclosures, Railway Light Enclosures, Corridor / Office Light Fitting Enclosures, Solar Light Fitting Enclosures**	Ingress Protection tests for first numeral degree of protections for dust proof, dust tight and Second numeral degree protections for drip proof, Rain Proof, Splash proof, Jet proof, Water tight and pressure water tight tests Electrical Strength tests, Solid object proof luminaries (IP 2X, 3X and 4X); Dust luminary (5X), Dust luminary (6X), Drip proof (X1), Rain proof (X3), Splash proof (X4), Jet proof (X5), Powerful jet proof (X6), Pressure water tight (X8) along electrical strength Functional / Performance tests, Drawings / Dimensional verification	IS 10322 (Part -4): 1984 (RA 2005) IEC 60598-1. Edition 8 (2014-05)	Dust proof IP 5X Dust tight proof (6X), Drip proof (X3) Splash Proof (X4) Jet proof (X5) Water tight (X7), Pressure Water tight (X8) Solid Object Proof (IP 2X.3X and 4X), Dust Proof IP(5X), Dust tight proof (6X), Drip proof (X1), Rain proof (X3) Splash Proof (X4) Jet proof (X5), Powerful Jet Proof (X6), Water tight (X7), Pressure Water tight (X8)
4.	**Window/ Unitary Air Conditioners**	Capacity Rating Test (Cl.10.10) Power Consumption Test for Cooling (Cl.10.8) Maximum Operating Conditions Test (Cl.10.4)	IS 1391(Part-1):1992 (RA 2005)	Air conditioner Capacity: 1756 W to 10541 W (6000 Btu/h to 36000 Btu/h)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
5.	**Split-Air Conditioners**	Capacity Rating Test (Cl.9.9) Power Consumption Test for Cooling (Cl.9.7) Maximum Operating Conditions Test (Cl.9. 4)	IS 1391(Part-2):1992 (RA 2004)	Air conditioner Capacity: 1756 W to 10541 W (6000 Btu/h to 36000 Btu/h)
6.	**Electrical Refrigerating Appliances, Frost free Refrigerator and Direct cool Refrigerator**	Rated Gross and Storage Volume	AS/NZS 4474-1: 2007	Up to 1000 L
		Pull down Test	IS 15750: 2006 (RA 2012)	-20 °C to +60°C
		Tested Energy consumption	IS 1476 (Part 1): 2000 Edition 4.1, (RA 2006)	0 to 20 kWh
XII.	**MEASURING INSTRUMENTS-ELECTRICAL AND ELECTRONIC (STATIC) ENERGY METERS**			
1.	**Electricity Meter Reading, Tariff and Load control**	Conformance test	IEC 62056 (Parts 21, 42, 46, 47, 5-3, 6-1 and 6-2)	Conformance Test Tool (CTT)
		Compliance test: 1.0Conformance to DLMS/ COSEM 2.0 Parameter verification: 2.1 SNRM/UA 2.2 Object list download 2.3 Association properties 2.4 Simultaneous operation 2.5 SECURITY: 2.5.1 Lowest Level Security Secret 2.5.2 Low Level Security (LLS) Secret	IS 15959: 2011 with Amd No. 1 July 2014	Conformance Test Tool (CTT) DLMS Explorer / Functional Evaluation Test Tool

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		2.5.3 High Level Security (HLS) Secret 2.6 ToU setting 2.7 Billing Period 2.8 Billing Period Counter		
	Electricity Meter Reading, Tariff and Load control	2.9 PARAMETER LIST: 2.9.1 (a) Instantaneous Parameters (b) Snap Shot of Instantaneous Parameters (c) Scaler Profile 2.9.2 Block load profile parameters 2.9.3 Selective access by Range for Block load profile 2.9.4 Daily load profile parameters 2.9.5 Selective access by Range for Daily load profile 2.9.6 Billing profile parameters 2.9.7 Selective access by Entry for Billing profile 2.10 General Purpose parameters: 2.10.1 Name Plate Details 2.10.2 Programmable Parameters 2.11 EVENT CODE AND EVENT LOGGING: 2.11.1 Indian Event Reference Table – Voltage Related	IS 15959: 2011 with Amd No. 1 July 2014	Conformance Test Tool (CTT) DLMS Explorer / Functional Evaluation Test Tool

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electricity Meter Reading, Tariff and Load control	2.11.2 Indian Event Reference Table – Current Related 2.11.3 Indian Event Reference Table – Power Related 2.11.4 Indian Event Reference Table – Transaction Related 2.11.5 Indian Event Reference Table – Other 2.11.6 Indian Event Reference Table – Non Roll Over 2.11.7 Indian Event Reference Table – Control 2.12 Selective access by Entry for Event Log Profile	IS 15959: 2011 with Amd No. 1 July 2014	Conformance Test Tool (CTT) DLMS Explorer / Functional Evaluation Test Tool
2.	**AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer**	AC Voltage Test	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IEC: 62052-11: 2003 IEC: 62053-11: 2003 IEC: 62053-21: 2003 IEC: 62053-22: 2003	0 to 10 kV RMS 690VA (2% of setting +5V)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	operated watt-hour meters and VAR-Hour meters		IEC: 62053-23: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour meters and VAR-Hour meters	Insulation Resistance	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884 :2010	Up to 9.9 GΩ.
		Impulse Voltage	IEC: 62052-11, 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	0.5 kV, 0.5J to 6 kV, 2J + 5%.
		Impulse Voltage (Surge Immunity Test)	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IS 15884: 2010	10kV, 1.2/50 μs 5 kA, 8/20 μs 2 Ω, 12 Ω
		Accuracy Requirements:	IS 13010: 2002,	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Limits of error due to variation of the current Test of meter Constant Test of Starting condition Test of No Load Condition Repeatability of error	Am1- Oct 04, Am2 - Jan 09. IS 13779, 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IS 12346: 1999 IEC: 62053-11: 2003	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Frequency:45Hz to 65Hz. Accuracy:±0.02%
		Interpretation of Test Results	IEC: 62053-21: 2003 IEC: 62053-22: 2003	Qualitative
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour meters and VAR-Hour meters	Test of influence Quantities: Influence of Ambient Temperature	IS 13010, 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697, 1999 (Reaffirmed 2004) IEC 62053-11: 2003	0 to 70°C; Accuracy: 1°C 30V to 480V 10mA to 100A: Accuracy: At UPF: 0.02% At 0.5 Lag: 0.04%
		Voltage variation: Line to Neutral= 240V Line to line = 110V	IEC 62053-21: 2003 IEC 62053-22: 2003 IEC 62053-23: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to+ 1.0 Accuracy: ±0.02%
		Frequency Variation: 50Hz/ 60Hz		Frequency: 45 to 65 Hz Voltage: 30V to 480V Current: 1mA to 200A Power factor:-1.0 to +1.0 Accuracy: ±0.02%
		Waveform: 10% of 3rd harmonic in Current circuit.	IS 13010, 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697, 1999 (Reaffirmed 2004) IEC 62053-11: 2003 CBIP Publication No: 304	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 30th voltage & current harmonics. Amplitude: 30% of fund. Accuracy: ±0.02%

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour meters and VAR-Hour meters	Harmonic component in the Current & voltage circuits Odd harmonic in AC current circuit. Sub harmonic in the Current circuit.	IEC 62053-21: 2003 IEC 62053-22: 2003 IEC 62053-21: 2003 IEC 62053-21: 2003 IEC 62053-22: 2003	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 30th voltage & current harmonics. Amplitude: 40% of fund Accuracy:±0.02%
		DC component in the current circuit.	IEC 62053-23: 2003	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		DC & even harmonics in the ac current circuit	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IEC 62053-21: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 30th voltage & current harmonics. Amplitude: 40% of fund Accuracy: ±0.02%

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Continuous magnetic induction of external origin (DC)	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697, 1999 (RA 2004) IEC 62053-21: 2003 IEC 62053-22: 2003 IEC 62053-23: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	1000 AT: Voltage: 30V to 480V Current: 1mA to 120A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour meters and VAR-Hour meters	Continuous magnetic induction of external origin (DC)	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325 IS 15884: 2010	10000 AT: Voltage: 30V to 480V Current: 1mA to 120A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Continuous magnetic induction of external origin (DC)	CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325 IS 15884: 2010	17500 AT: Voltage: 30V to 480V Current: 1mA to 120A Power factor: -1.0 to +1.0 Accuracy: ±0.02%

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Magnetic induction of External Origin (AC)	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IEC 62053-21: 2003 IEC 62053-22: 2003 IEC 62053-23: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325 IS 15884: 2010	400 AT: Voltage: 30V to 480V Current: 1mA to 120A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Magnetic induction of External Origin (AC)	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing IS 15884: 2010	2800 AT: Voltage: 30V to 480V Current: 1mA to 120A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour meters and VAR-Hour meters	Magnetic induction of External (AC)	CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	28000 AT 5 V to 135V (0.1%) 135 V to 270V (0.2%) 10 mA to 50 A Upf: 0.02%
		Reversed Phase Sequence	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697, 1999 (RA 2004)	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 62053-11: 2003 IEC 62053-21: 2003 IEC 62053-22: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325 IS 15884: 2010	
		Oblique Suspension	IS 13010: 2002, Am1 - Oct 04, Am2 -Jan 09. IEC 62053-11: 2003	Accuracy: 5º Voltage: 30 to 480V Current: 1m to 200A Power factor: -1.0 to +1.0
		Mechanical Load of Register	IS 13010: 2002, Am1 - Oct 04, Am2 -Jan 09. IEC 62053-11: 2003	Voltage: 30V to 480V Current: 1m to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour	Voltage Unbalance Auxiliary voltage: ±15% / Operation of accessories	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697, 1999 (RA 2004) IEC 62053-21: 2003 IEC 62053-22: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	meters and VAR-Hour meters .	Test of Electrical Requirement: Power Consumption/loss Voltage circuit Active Power Apparent Power Current circuit	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697, 1999 (RA 2004) IEC 62053-11: 2003 IEC 62053-21: 2003 IEC 62053-22: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Upto 10W: 0.2% 20 VA: 0.4%
		Influence of supply Voltage: Voltage dips &Interruption	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697, 1999 (RA 2004) IEC 62053-11: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Voltage: 30 V to 480 V 5ms to 10s: 0.001%
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour	Short time over current test	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004)	Voltage: 30 to 480V 5ms to 10s
		Effect of Short time over current test Influence of self heating	Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697, 1999 (RA 2004) IEC 62053-11: 2003 IEC 62053-21: 2003 IEC 62053-22: 2003 IEC 62053-23: 2003 CBIP Publication No: 304	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy:±0.02%

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	meters and VAR-Hour meters		CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	
		Influence of heating	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IEC 62053-11: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Immunity to Earth Fault	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IEC 62053-11: 2003	5 V to 135 V (0.1%) 135 V to 270 V (0.2%) 10 mA to 100 A Upf: 0.02%
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour	Test of immunity to Electrostatic discharges	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06.	±0.2kV to 30kV
		Fast Transient Burst	IS 14697, 1999 (RA 2004) IEC 62053-11: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Pulse amplitude upto 7kV Pulse 5/50ns

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	meters and VAR-Hour meters	Test of immunity to Electromagnetic HF fields	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA2004) IS 15884: 2010	Frequency range: 80MHz to 1GHz Field strength: 10V/m
		Radio Interference Measurement:	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06.	
		(a) Conducted emission	IS 14697: 1999 (RA 2004) IEC: 62052-11: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	150kHz to 30MHz
		(b) Radiated emission	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IS 15884: 2010	30MHz to 300MHz
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy, AC Static Transformer operated watt-hour	Surge Immunity Test	IS 15884 :2010 IEC 61000-4-5 : 2005 IEC 62053-21 : 2003 IEC 62053-22 : 2003	10kV (1.2/50 μs) 5 kA, 8/20 μs
		Dry heat test Cold test Damp heat cyclic test	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IEC: 62052-11. 2003	- 45°C to 200°C Accuracy: +1°C R.H.: Upto 99% Accuracy: +3% Forced air circulation. Capacity: 1cu.m

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	meters and VAR-Hour meters	Clearance & creepage distance	CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Range: 0 to 200 mm Accuracy: 0.01 mm
		Spring Hammer test / Mechanical test of meter case	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IEC: 62052-11. 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325 IS 15884: 2010	0.22 Nm ±0.05 Nm. Accuracy :±0.02%
		Resistance to Heat and fire	IS 14697: 1999 (RA 2004) IEC: 62052-11: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325 IS 15884: 2010	650°C to 960°C
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy,	Adjustment/ Range of adjustment	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IEC 62053-11: 2003	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Independence of adjustment Sustained accuracy test Running at low load	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09.	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	AC Static Transformer operated watt-hour meters and VAR-Hour meters	Material used in the dial		
		Missing potential detection	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Missing neutral detection.	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		CT polarity reversal/Current reversal detection.	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		By pass CT/Shorting detection.	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy,	Phase sequence reversal detection.	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Recording power on time since the last reset.	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	AC Static Transformer operated watt-hour meters and VAR-Hour meters		CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325	Accuracy: ±0.02%
		Meter shall indicate load unbalance over & above 25% between the phases for loads above10%.	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Meter shall record occurrence & restoration condition of abnormal magnetic field in the vicinity.	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		MD Reset	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Maximum Demand Integration Period (DIP)	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
	AC Static watt-hour meter, AC direct connected static prepayment meters for AC Active Energy, Electro-Mechanical Meters for Active Energy,	Communication Capability	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Accuracy: ±0.02%
		Time Of Day (TOD) Metering	IS 14697: 1999 Cl. G-10 (RA 2004) CBIP Publication NO: 304	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	AC Static Transformer operated watt-hour meters and VAR-Hour meters		CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Accuracy: ±0.02%
		General & Constructional Requirement	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IS 12346: 1999 IEC 62053-11: 2003 IEC 62053-21: 2003 IEC 62053-22: 2003 IEC 62053-23: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Qualitative
		Marking of Meters	IS 13010: 2002, Am1- Oct 04, Am2 - Jan 09. IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IEC 62052-11: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter Specifications & Testing Research Publication No: 325	Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**Accuracy Test On Reference Sub Standard Meter Of Accuracy Class 0.1 & 0.05**	Accuracy test	IS 13779: 1999 (RA 2004) Am1- Oct 03, Am2- Oct 04, Am3- Dec 04, Am4- Jun 06. IS 14697: 1999 (RA 2004) IS 12346: 1999 IEC 62053-11: 2003 IEC 62053-21: 2003 IEC 62053-22: 2003 IEC 62053-23: 2003 CBIP Publication No: 304 CBIP Guide on Static Energy Meter – Specifications & Testing Research Publication No: 325 IS 15884: 2010	Voltage: 30V to 480V Current: 1mA to 200A Power factor: -1.0 to +1.0 Frequency: 45Hz to 65Hz Accuracy: ±0.02%

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