

Laboratory **EMC Testing and Compliance LLP, Plot No. 461, Phase-V, Udyog Vihar, Gurgaon, Haryana**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6346**

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Validity **27.09.2017 to 26.09.2019**

Last Amended on **29.04.2019**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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**ELECTRICAL TESTING**

I.	DOMESTIC ELECTRICAL APPLIANCES			
1.	Cooking Ranges, Hobs, Ovens	Protection against Electric shock & energy hazards	IS 302-2-6: 2009, Cl.8	Qualitative
		Power input & current	IS 302-2-6: 2009, Cl.10	0.01V to 600V 0.01 A to 20A 0.01W to 8000W Upto 400Hz
		Heating	IS 302-2-6 : 2009, Cl.11	0.1°C to 1300°C 1.0μΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IS 302-2-6: 2009, Cl.13	1 μA to 50 mA Upto 5 kV <sub>ac</sub> Upto 6kV <sub>dc</sub> 1mA to 100mA
		Transient over voltage	IS 302-2-6: 2009, Cl.14	1.2 μs /50μs, 1 kV to 10kV
		Moisture Resistance	IS 302-2-6: 2009, Cl.15	Qualitative (1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH)
		Leakage Current & Electrical Strength	IS 302-2-6: 2009, Cl.16	Upto 50 mA
		Overload protection of transformers and associated circuits	IS 302-2-6: 2009, Cl.17	Upto 600V Upto 20A Upto 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IS 302-2-6: 2009, Cl.19	Qualitative 0.1°C to 400°C

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Convenor

**Nitan Garg**  
Program Manager

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		Stability and Mechanical Hazards	IS 302-2-6: 2009,Cl.20	Qualitative
		Mechanical Strength	IS 302-2-6: 2009,Cl.21	0.5J ,1J to 8J
		Verification of Construction	IS 302-2-6: 2009,Cl.22	Qualitative Ambient to 250°C
		Internal wiring	IS 302-2-6: 2009,Cl.23	0.001 mm to 25 mm 0.01 mm to 300 mm Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Verification of Components	IS 302-2-6: 2009,Cl.24	Qualitative
		Supply connection and external flexible cords	IS 302-2-6: 2009,Cl.25	Upto25mm Upto300mm 0.1kV to 5kV 1mA to 100mA 0.1 N to 196 N 0.1 Nm to 0.5Nm 1 Nm to 5 Nm
		Terminals for external conductors	IS 302-2-6: 2009,Cl.26	Upto25mm 0.1 N to 196 N 1 Nm to 5 Nm
		Provision for earthing	IS 302-2-6: 2009,Cl.27	2A to 64A 0.1V to 6.3 V
		Screws and connections	IS 302-2-6: 2009,Cl.28	Upto300 mm 0.1 Nm to 0.5Nm 1 Nm to 5Nm
		Clearances and Creepage Distances	IS 302-2-6: 2009,Cl.29	0.1N to 196N Upto25mm Upto300mm 1.2/50µs 1 kV to 10kV 20V to 600V 0.05 A to 2 A

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		Resistance to heat and fire	IS 302-2-6: 2009, Cl.30	Ambient to 250°C 0.01mm to 300mm Ambient to 960°C
2.	Toasters, Grills, Roasters	Protection against Electric shock & energy hazards	IS 302-2-9:2009, Cl.8	Qualitative
		Power input & current	IS 302-2-9:2009, Cl.10	0.01V to 600V 0.0001A to 20A 0.001W to 8000W
		Heating	IS 302-2-9:2009, Cl.11	0.1°C to 400°C 1.0μΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IS 302-2-9:2009, Cl.13	Upto 50 mA Upto 5 kV <sub>ac</sub> Upto 6kV <sub>dc</sub>
		Transient over voltage	IS 302-2-9:2009, Cl.14	1.2/50μs 1kV to 10kV
		Moisture Resistance	IS 302-2-9:2009, Cl.15.1 & 15.3	1.5 LPM to 15 LPM Upto 50°C 35%RH to 95%RH
		Leakage Current & Electrical Strength	IS 302-2-9:2009, Cl.16	Upto 50 mA Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IS 302-2-9:2009, Cl.17	Upto 600V Upto 20A 0.1°C to 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IS 302-2-9:2009, Cl.19	Qualitative 0.1°C to 400°C
		Stability and Mechanical Hazards	IS 302-2-9:2009, Cl.20	Qualitative 0.1°C to 400°C
		Mechanical Strength	IS 302-2-9:2009, Cl.21	Qualitative 0.5 J, 1J to 8J
		Verification of Construction	IS 302-2-9:2009, Cl.22	Qualitative Ambient to 250 °C

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		Internal wiring	IS 302-2-9:2009,Cl.23	Qualitative Upto25mm Upto300mm 0.01kV to 5kV 1mA to 100mA Up to 10000 cycles
		Verification of Components	IS 302-2-9:2009,Cl.24	Qualitative
		Supply connection and external flexible cords	IS 302-2-9:2009,Cl.25	Upto 25mm 0.01mm to 300mm 1mA to 100mA 1mA to 100mA 0.2Nm to 1.2Nm 1Nm to 5Nm Upto196.10 N 1 $\mu$ A to 50mA Upto 5 kV <sub>ac</sub> Upto6 kV <sub>dc</sub>
		Terminals for external conductors	IS 302-2-9:2009,Cl.26	0.01mm to 25 mm 0.01mm to 300mm 1Nm to 5Nm 10cNmto50cNm
		Provision for earthing	IS 302-2-9:2009,Cl.27	2A to 64 A Upto 600 m $\Omega$
		Screws and connections	IS 302-2-9:2009,Cl.28	Upto 300mm 1 Nm to 5 Nm 10cNmto50cNm
		Clearances and Creepage Distance	IS 302-2-9:2009,Cl.29	Upto 196.1 N Upto 300 mm
		Resistance to heat and fire	IS 302-2-9:2009,Cl.30	Ambient to 250°C 20 N Ball Diameter: 5mm Ambient to 960 °C Upto1350 °C Upto 30s

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		Resistance to rusting	IS 302-2-9:2009, Cl.31	Ambient to 100°C 35%RH to 95%RH
3.	<b>Warming Plates</b>	Protection against Electric shock & energy hazards	IS 302-2-12:1993, Cl.8	Qualitative
		Power input & current	IS 302-2-12:1993, Cl.10	Upto600V Upto20A Upto 8000W
		Heating	IS 302-2-12:1993, Cl.11	0.1°C to 400°C 1.0μΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IS 302-2-12:1993, Cl.13	Upto 50 mA Upto 5 kV <sub>ac</sub> Upto6 kV <sub>dc</sub>
		Transient over voltage	IS 302-2-12:1993, Cl.14	1.2/50μs 1kV to 10kV
		Moisture Resistance	IS 302-2-12:1993, Cl.15	1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IS 302-2-12:1993, Cl.16	Upto 50 mA Upto 5 kV <sub>ac</sub> Upto6 kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IS 302-2-12:1993, Cl.17	Upto600V Upto20A 0.1°C to 400°C 1μΩ to 19.99kΩ
		Abnormal Operation	IS 302-2-12:1993, Cl.19	Qualitative 0.1°C to 400°C
		Stability and Mechanical Hazards	IS 302-2-12:1993, Cl.20	Qualitative 0.1°C to 400°C
		Mechanical Strength	IS 302-2-12:1993, Cl.21	Qualitative
		Verification of Construction	IS 302-2-12:1993, Cl.22	Qualitative Ambient to 250 °C

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		Internal wiring	IS 302-2-12:1993, Cl.23	Upto 300mm Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Verification of Components	IS 302-2-12:1993, Cl.24	Qualitative
		Supply connection and external flexible cords	IS 302-2-12:1993, Cl.25	Upto 300mm Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub> Upto 196.10 N 1Nm to 5 Nm 10cNm to 50cNm 1 μA to 50mA
		Terminals for external conductors	IS 302-2-12:1993, Cl.26	0.01mm to 25 mm 1Nm to 5Nm 10cNm to 50cNm
		Provision for earthing	IS 302-2-12:1993, Cl.27	Upto 64 A Upto 600 mΩ 0.01mm to 300mm
		Screws and connections	IS 302-2-12:1993, Cl.28	0.01mm to 300mm 1Nm to 5 Nm 10cNm to 50cNm
		Clearances and Creepage Distance	IS 302-2-12:1993, Cl.29	0.1N to 196.10N Upto 25mm 0.01mm to 300mm 200MHz, 1.2/50μs 1kV to 10 kV Upto 600 V <sub>rms</sub> Upto 2.0 A
		Resistance to heat and fire	IS 302-2-12:1993, Cl.30	Ambient to 250°C 20 N/ Ambient to 1000°C
		Resistance to rusting	IS 302-2-12:1993, Cl.31	Qualitative 0.1°C to 250°C 0.1°C to 50°C 35%RH to 95%RH

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4.	<b>Kitchen Machines</b>	Protection against Electric shock & energy hazards	IS 302-2-14:2009,Cl.8	Qualitative
		Power input & current	IS 302-2-14:2009,Cl.10	Upto 600V Upto 20A Upto 8000W
		Heating	IS 302-2-14:2009,Cl.11	0.1°C to 400°C 1.0μΩ to 19.99kΩ Upto 300V 1 Hz to 400Hz
		Leakage Current & Electrical Strength at operating temperature	IS 302-2-14:2009,Cl.13	1μA to 50 mA Upto 5 kV <sub>ac</sub> Upto6 kV <sub>dc</sub>
		Transient over voltage	IS 302-2-14:2009,Cl.14	1.2/50μs 1kV to 10kV
		Moisture Resistance	IS 302-2-14:2009,Cl.15	1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IS 302-2-14:2009,Cl.16	1μA to 50 mA Upto 5 kV <sub>ac</sub> Upto6 kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IS 302-2-14:2009,Cl.17	Upto 600V Upto 20A 0.1°C to 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IS 302-2-14:2009,Cl.19	Qualitative 0.1°C to 400°C
		Stability and Mechanical Hazards	IS 302-2-14:2009,Cl.20	Qualitative 0.5J,1J to 8J
		Mechanical Strength	IS 302-2-14:2009,Cl.21	0.5J, 500 gm Ball Diameter:50mm 196.10N

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		Verification of Construction	IS 302-2-14:2009,Cl.22	Qualitative Ambient to 250 °C
		Internal wiring	IS 302-2-14:2009,Cl.23	Upto 300mm Upto 5 kV <sub>ac</sub> 1mA to 100mA Upto 10000 cycles
		Verification of Components	IS 302-2-14:2009,Cl.24	Qualitative
		Supply connection and external flexible cords	IS 302-2-14:2009,Cl.25	Upto 300mm Upto 5 kV <sub>ac</sub> 1mA to 100mA 1μΩ to 19.99 kΩ Upto 196.10 N 0.2 Nmto 5 Nm 1 μA to 50 mA
		Terminals for external conductors	IS 302-2-14:2009,Cl.26	0.01mm to 25 mm Upto 196.10 1Nm to 5Nm 10cNmto50cNm
		Provision for earthing	IS 302-2-14:2009,Cl.27	Upto 64 A Upto 600 mΩ 0.01mm to 300mm
		Screws and connections	IS 302-2-14:2009,Cl.28	0.01mm to 300mm 1Nm to 5 Nm 10cNmto50cNm
		Clearances and Creepage Distance	IS 302-2-14:2009,Cl.29	0.1 to 196N 0.01mm to 300mm 1.2/50μs 1kV to 10 kV Upto 600Vrms 0.05A to 2 A
		Resistance to heat and fire	IS 302-2-14:2009,Cl.30	Ambient to 250°C 20 N Ambient to 1000°C, Upto 30s

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		Resistance to rusting	IS 302-2-14:2009, Cl.31	0.1°C to 250°C 0.1°C to 50°C 35%RH to 95%RH
5.	<b>Clocks</b>	Protection against Electric shock & energy hazards	IS 302-2-26:2014, Cl.8	Qualitative
		Power input & current	IS 302-2-26:2014, Cl.10	Upto 600V Upto 20A Upto 8000W
		Heating	IS 302-2-26:2014, Cl.11	0.1°C to 400°C 1.0μΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IS 302-2-26:2014, Cl.13	1μA to 50 mA Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Transient over voltage	IS 302-2-26:2014, Cl.14	1.2/50μs 1 kV to 10kV
		Moisture Resistance	IS 302-2-26:2014, Cl.15.1, Cl.15.3	1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IS 302-2-26:2014, Cl.16	1μA to 50 mA Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IS 302-2-26:2014, Cl.17	Upto 600V Upto 20A  0.1°C to 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IS 302-2-26:2014, Cl.19	Upto 600V Upto 20A 0.1 °C to 400°C 1μΩ to 19.99 kΩ
		Stability and Mechanical Hazards	IS 302-2-26:2014, Cl.20	Upto 196.10N Upto 90°

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		Mechanical Strength	IS 302-2-26:2014, Cl.21	0.5J & 1 J to 8J
		Verification of Construction	IS 302-2-26:2014, Cl.22	Upto 196.10N 0.01mm to 300mm Ambient to 250 °C
		Internal wiring	IS 302-2-26:2014, Cl.23	Upto 25mm 0.01mm to 300mm Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub> Upto 300V Upto 30A
		Verification of Components	IS 302-2-26:2014, Cl.24	Qualitative
		Supply connection and external flexible cords	IS 302-2-26:2014, Cl.25	Upto 25mm 0.01mm to 300mm Upto 5kV <sub>ac</sub> 1mA to 100mA 1μΩ to 19.99 kΩ Upto 196.10 N 0.2 Nm to 1.2 Nm 1Nm to 5 Nm 1 μA to 50mA
		Terminals for external conductors	IS 302-2-26:2014, Cl.26	0.01 mm to 25 mm Upto 196.10Nm 1Nm to 5Nm 10cNm to 50cNm
		Provision for earthing	IS 302-2-26:2014, Cl.27	Upto 64 A Upto 600 mΩ 0.01mm to 300mm
		Screws and connections	IS 302-2-26:2014, Cl.28	0.01mm to 300mm 1 Nm to 5 Nm 10cNm to 50cNm
		Clearances and Creepage Distance	IS 302-2-26:2014, Cl.29	0.1 N to 196.10 N Upto 25mm 0.01mm to 300mm 200MHz

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				Upto 600V <sub>rms</sub> 0.05A to 2 A
		Resistance to heat and fire	IS 302-2-26:2014, Cl.30	Ambient to 250°C 20 N Ambient to 960°C
		Resistance to rusting	IS 302-2-26:2014, Cl.31	Ambient to 250°C Ambient to 50°C 35%RH to 95%RH
<b>6.</b>	<b>Room Heater</b>	Protection against Electric shock & energy hazards	IS 302-2-30:2007+A1: 2012, Cl.8	Qualitative
		Power input & current	IS 302-2-30:2007+A1: 2012, Cl.10	Upto 600V Upto 20A Upto 8000W
		Heating	IS 302-2-30:2007+A1: 2012, Cl.11	0.1°C to 400°C 1.0 μΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IS 302-2-30:2007+A1: 2012, Cl.13	1μA to 50 mA Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Transient over voltage	IS 302-2-30:2007+A1: 2012, Cl.14	1.2/50μs 1kV to 10kV
		Moisture Resistance	IS 302-2-30:2007+A1: 2012, Cl.15	1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IS 302-2-30:2007+A1: 2012, Cl.16	1μA to 50 mA Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IS 302-2-30:2007+A1: 2012, Cl.17	Upto 600V Upto 20A 0.1°C to 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IS 302-2-30:2007+A1: 2012, Cl.19	0.1°C to 400°C Qualitative

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		Stability and Mechanical Hazards	IS 302-2-30:2007+A1: 2012, Cl.20	0.1°C to 400°C Qualitative
		Mechanical Strength	IS 302-2-30:2007+A1: 2012, Cl.21	Qualitative
		Verification of Construction	IS 302-2-30:2007+A1: 2012, Cl.22	Qualitative Ambient to 250 °C
		Internal wiring	IS 302-2-30:2007+A1: 2012, Cl.23	Upto 300mm Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Verification of Components	IS 302-2-30:2007+A1: 2012, Cl.24	Qualitative
		Supply connection and external flexible cords	IS 302-2-30:2007+A1: 2012, Cl.25	Upto300mm Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub> Upto 196.10 N 0.1 Nm to 5 Nm 1 µA to 50mA
		Terminals for external conductors	IS 302-2-30:2007+A1: 2012, Cl.26	Upto 25 mm 1 Nm to 5 Nm 10cNmto50cNm
		Provision for earthing	IS 302-2-30:2007+A1: 2012, Cl.27	2 A to 64 A
		Screws and connections	IS 302-2-30:2007+A1: 2012, Cl.28	0.01mm to 300mm 1Nm to 5 Nm 10cNmto50cNm
		Clearances and Creepage Distance	IS 302-2-30:2007+A1: 2012, Cl.29	Upto 196.10N Upto 25mm 0.01mm to 300mm Upto 600V <sub>rms</sub> 0.05A to 2 A 01Sec to 99.59 Sec 200MH
		Resistance to heat and fire	IS 302-2-30:2007+A1: 2012, Cl.30	0.1°C to 250°C 0.01mm to 300mm

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				5 °C to 50 °C 50%RH to 95%RH Ambient to 960 °C 0.01 s to 99.59 minute
		Resistance to rusting	IS 302-2-30:2007+A1: 2012, Cl.31	Ambient to 250°C 5°C to 50°C 50 %RH to 95%RH
7.	Fans	Protection against Electric shock & energy hazards	IS 302-2-80:2017,Cl.8	Qualitative
		Power input & current	IS 302-2-80:2017,Cl.10	Upto600V Upto 20A Upto 8000W
		Heating	IS 302-2-80:2017,Cl.11	0.1°C to 400°C 1.0μΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IS 302-2-80:2017,Cl.13	Upto 50 mA Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Transient over voltage	IS 302-2-80:2017,Cl.14	1.2/50μs 1kV to 10kV
		Moisture Resistance	IS 302-2-80:2017,Cl.15	1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IS 302-2-80:2017,Cl.16	Up to 50 mA Upto 5kV <sub>ac</sub> Upto 6kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IS 302-2-80:2017,Cl.17	Upto 600V Upto 20A Upto 400°C 1μΩto 19.99 kΩ
		Abnormal Operation	IS 302-2-80:2017,Cl.19	0.1°C to 400°C Qualitative

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Stability and Mechanical Hazards	IS 302-2-80:2017, Cl.20	Upto196.10N 0.01° to 90° Qualitative
		Mechanical Strength	IS 302-2-80:2017, Cl.21	Qualitative 0.5 J & 1J to 8J
		Verification of Construction	IS 302-2-80:2017, Cl.22	Qualitative Ambient to 250 °C
		Internal wiring	IS 302-2-80:2017, Cl.23	Qualitative
		Verification of Components	IS 302-2-80:2017, Cl.24	Qualitative
		Supply connection and external flexible cords	IS 302-2-80:2017, Cl.25	Upto300mm Upto5 kV <sub>ac</sub> Upto6 kV <sub>dc</sub> Upto196.10 N 1Nm to 5Nm 10cNmto50cNm Upto230V Upto30A
		Terminals for external conductors	IS 302-2-80:2017, Cl.26	0.01mm to 300mm 1Nm to 5Nm 10cNmto50cNm
		Provision for earthing	IS 302-2-80:2017, Cl.27	2A to 64 A Up to 600mΩ
		Screws and connections	IS 302-2-80:2017, Cl.28	0.01mm to 300mm 1Nm to 5 Nm 10 cNm to 50 cNm
		Clearances and Creepage Distance	IS 302-2-80:2017, Cl.29	Upto196.10N Upto 25mm 0.01mm to 300mm Upto600V <sub>rms</sub> Upto2 A 0.01s to 99.59 s 1.2/50μs 1 kVto10kV

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Resistance to heat and fire	IS 302-2-80:2017, Cl.30	Ambient to 250°C 20 N Ambient to 1000 °C
		Resistance to rusting	IS 302-2-80:2017, Cl.31	Ambient to 250°C Upto50°C 35%RHto95%RH
8.	<b>Electric Stoves</b>	Protection against Electric shock & energy hazards	IS 302-2-202, Cl.8	Qualitative
		Power Input and Current	IS 302-2-202, Cl.10	Upto600V Upto20A Upto 8000W
		Heating	IS 302-2-202, Cl.11	0.1°Cto400°C 1.0μΩ to 19.99kΩ
		Leakage Current and electrical strength at operating temperature	IS 302-2-202, Cl.13	1μA to 50 mA Upto 5kV <sub>ac</sub> Upto6kV <sub>dc</sub>
		Leakage current and electrical strength	IS 302-2-202, Cl.16	1μA to 50 mA Upto 5kV <sub>ac</sub> Upto6kV <sub>dc</sub>
		Abnormal operation	IS 302-2-202, Cl.19	0.1°C to 400°C
		Stability and mechanical hazards	IS 302-2-202, Cl.20	Qualitative 0.1°C to 400°C
		Mechanical strength	IS 302-2-202, Cl.21	Qualitative 0.5J & 1J to 8J
		Verification of Construction	IS 302-2-202, Cl.22	Qualitative Ambient to 250°C
		Internal wiring	IS 302-2-202, Cl.23	Upto300mm 0.1kV to 5 kV 1mA to 100mA Up to 10,000 Cycle Qualitative
		Verification of Components	IS 302-2-202, Cl.24	Qualitative

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Supply connection and external flexible cords	IS 302-2-202, Cl.25	Upto 300mm 0.1kV to 5kV 1mA to 100mA Upto196.10 N 0.2 Nm to 1.2Nm 1Nm to 5Nm 1 $\mu\Omega$ to19.99 k $\Omega$ Upto 50 mA Upto 5kV <sub>ac</sub> Upto6kV <sub>dc</sub>
		Terminals for external conductors	IS 302-2-202, Cl.26	Upto 25mm Upto196.10 N 1Nm to 5 Nm 10cNmto50cNm
		Provision for Earthing	IS 302-2-202, Cl.27	2 A to 64 A Up to 600 m $\Omega$ 0.01mm to 300mm
		Screws and connections	IS 302-2-202, Cl.28	1Nm to 5 Nm 10cNmto50cNm 0.01mm to 300mm
		Clearance and creepage distances	IS 302-2-202, Cl.29	Upto196.10 N Upto 25mm 0.01mm to 300mm 1.2/50 $\mu$ s 1kVto10 kV 1Vto600V 0.001 A to 2 A 0.01s to 99.59 minute
		Resistance to heat and fire	IS 302-2-202, Cl.30	Ambient to 250°C Force: 20N 0.01mm to 300mm Ambient to 960°C Upto1350°C
9.	Cooking Range Hobs, Oven	Protection against Electric shock &	IEC 60335-2-6:2014, Cl.8	Qualitative

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	<b>appliances</b>	energy hazards		
		Power input & current	IEC 60335-2-6:2014, Cl.10	Upto600V Uptoto20A Uptoto 8000W
		Heating	IEC 60335-2-6:2014, Cl.11	0.1°Cto400°C 1μΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IEC 60335-2-6:2014, Cl.13	Up to 50 mA Upto 5kV <sub>ac</sub> Upto6kV <sub>dc</sub>
		Transient over voltage	IEC 60335-2-6:2014, Cl.14	1.2/50μs 1kV to 10 kV
		Moisture Resistance	IEC 60335-2-6:2014, Cl.15	1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IEC 60335-2-6:2014, Cl.16	Upto 50 mA Qualitative
		Overload protection of transformers and associated circuits	IEC 60335-2-6:2014, Cl.17	Upto600V Upto20A 0.1°C to 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IEC 60335-2-6:2014, Cl.19	0.1°C to 400°C Qualitative
		Stability and Mechanical Hazards	IEC 60335-2-6:2014, Cl.20	0.1°C to 400°C Qualitative
		Mechanical Strength	IEC 60335-2-6:2014, Cl.21	Qualitative 0.5J & 1 to 8J
		Verification of Construction	IEC 60335-2-6:2014, Cl.22	Qualitative Ambient to 250 °C
		Internal wiring	IEC 60335-2-6:2014, Cl.23	Qualitative
		Verification of Components	IEC 60335-2-6:2014, Cl.24	Qualitative
		Supply connection and external flexible cords	IEC 60335-2-6:2014, Cl.25	Upto 300mm Upto 5kV <sub>ac</sub>

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				1mA to 100mA Upto196 N 0.1Nm to 5 Nm
		Terminals for external conductors	IEC 60335-2-6:2014, Cl.26	Upto 25mm 0.1Nmto5Nm
		Provision for earthing	IEC 60335-2-6:2014, Cl.27	2A to 64 A 0.1V to6.3V
		Screws and connections	IEC 60335-2-6:2014, Cl.28	0.01mm to 300mm 0.1Nm to 5Nm
		Clearances and Creepage Distance	IEC 60335-2-6:2014, Cl.29	0.1Nto196N Upto300mm Upto600Vrms 0.05Ato 2 A 1.2/50µs 1 kVto10kV
		Resistance to heat and fire	IEC 60335-2-6:2014, Cl.30	Ambient to 250°C 0.01mm to 300mm Ambient to 960 °C, 0.01s to 60 s
		Resistance to rusting	IEC 60335-2-6:2014, Cl.31	0.1°Cto250°C Upto50°C 35%RHto95%RH
10.	<b>Grills Toaster, Portable Cooking Appliances</b>	Protection against Electric shock & energy hazards	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.8	Qualitative
		Power input & current	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.10	Upto 600V Upto 20A Upto 8000W
		Heating	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.11	0.1°Cto400°C 1 µΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.13	Up to 250 mA Upto 5kV <sub>ac</sub> Upto6kV <sub>dc</sub>

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		Transient over voltage	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.14	1.2/50 $\mu$ s 1kVto10kV
		Moisture Resistance	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.15	1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.16	Upto 50 mA Upto 5kV <sub>ac</sub> Upto6kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.17	Upto600V Upto 20A 0.1°C to 400°C 1 $\mu$ $\Omega$ to 19.99 k $\Omega$
		Abnormal Operation	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.19	0.1°C to 400°C Upto600V Upto20A 1.0 $\mu$ $\Omega$ to 19.99k $\Omega$
		Stability and Mechanical Hazards	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.20	1N to196.10N Rotation: 0° to 360°
		Mechanical Strength	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.21	Qualitative 0.5J & 1 to 8J
		Verification of Construction	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.22	Qualitative Ambient to 250 °C
		Internal wiring	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.23	Upto 300mm Upto 5kV <sub>ac</sub> Upto 6kV <sub>dc</sub>
		Supply connection and external flexible cords	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.25	Upto 300mm Upto 5kV <sub>ac</sub> Upto 6kV <sub>dc</sub> Upto196.10 N 1Nm to 5 Nm 10 cNm to50cNm
		Terminals for external conductors	IEC 60335-2-9:2008+A1:2012+A2:2016, Cl.26	0.01mmto300 mm 1Nm to 5 Nm

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				10cNmto50cNm
		Provision for earthing	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.27	2A to 64 A Upto 600mΩ
		Screws and connections	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.28	0.01mm to 300mm 1Nm to 5 Nm Upto50cNm
		Clearances and Creepage Distance	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.29	Upto196.10N Upto300mm Upto600V Upto 2 A
		Resistance to heat and fire	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.30	Ambient to 250°C 20N Ambient to 960 °C Upto 30 Sec
		Resistance to rusting	IEC 60335-2-9:2008+A1:2012+A2:2016,Cl.31	0.1°Cto 250°C 0.1°Cto 50°C 35%RHto95%RH
<b>11.</b>	<b>Kitchen Machine</b>	Protection against Electric shock & energy hazards	IEC 60335-2-14:2016,Cl.8	Qualitative
		Power input & current	IEC 60335-2-14:2016,Cl.10	Upto600V Upto20A Upto8000W
		Heating	IEC 60335-2-14:2016,Cl.11	0.1°C to 400°C 1 μΩ to 19.99kΩ Upto 300V Upto 400Hz
		Leakage Current & Electrical Strength at operating temperature	IEC 60335-2-14:2016,Cl.13	Upto 50 mA Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Transient over voltage	IEC 60335-2-14:2016,Cl.14	1.2/50μs 1 kVto10kV
		Moisture Resistance	IEC 60335-2-14:2016,Cl.15	Qualitative
		Leakage Current &	IEC 60335-2-14:2016,Cl.16	Upto 50 mA

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		Electrical Strength		Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IEC 60335-2-14:2016, Cl.17	Upto 600V Upto 20A 0.1°C to 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IEC 60335-2-14:2016, Cl.19	Qualitative 0.1°C to 400°C 1μΩ to 19.99 kΩ
		Stability and Mechanical Hazards	IEC 60335-2-14:2016, Cl.20	Qualitative 0.5J & 1to8J
		Mechanical Strength	IEC 60335-2-14:2016, Cl.21	0.5J, 500gm Ball: 50 mm 196.10N
		Verification of Construction	IEC 60335-2-14:2016, Cl.22	Qualitative Ambient to 250 °C
		Internal wiring	IEC 60335-2-14:2016, Cl.23	Upto 300mm Upto 5 kV <sub>ac</sub> Upto 6kV <sub>dc</sub>
		Verification of Components	IEC 60335-2-14:2016, Cl.24	Qualitative
		Supply connection and external flexible cords	IEC 60335-2-14:2016, Cl.25	Upto 300mm Upto 5kV 1mA to 100 mA 1μΩ to 19.99 kΩ Upto 196.10 N 0.1 Nm to 5 Nm
		Terminals for external conductors	IEC 60335-2-14:2016, Cl.26	Upto 25 mm Upto 196.10N 0.1 Nm to 5Nm
		Provision for earthing	IEC 60335-2-14:2016, Cl.27	Upto 64 A Upto 600 mΩ
		Screws and connections	IEC 60335-2-14:2016, Cl.28	0.01mm to 300mm 0.1 Nm to 5Nm

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		Clearances and Creepage Distance	IEC 60335-2-14:2016, Cl.29	0.1N to 196N Upto 300mm 1.2/50µs 1kV to 10 kV 20V <sub>rms</sub> to 600V <sub>rms</sub> 0.05A to 2 A
		Resistance to heat and fire	IEC 60335-2-14:2016, Cl.30	Ambient to 250°C 20 N/Ambient to 960 °C Upto 30 s Upto 1350°
		Resistance to rusting	IEC 60335-2-14:2016, Cl.31	Ambient to 250°C Ambient to 50°C 35%RH to 95%RH
12.	<b>Warming Plates Appliance</b>	Protection against Electric shock & energy hazards	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.8	Qualitative (Upto 60V)
		Power input & current	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.10	Upto 600V Upto 20A Upto 8000 W
		Heating	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.11	Upto 400°C 1.0 µΩ to 19.99kΩ Upto 300V Upto 400 Hz
		Leakage Current & Electrical Strength at operating temperature	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.13	1µA to 50 mA Upto 5KV AC 1mA to 100mA
		Transient over voltage	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.14	1.2/50µs 1 kV to 10kV
		Moisture Resistance	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.15	1.5 LPM to 15 LPM 15 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.16	1µA to 50 mA Upto 5kV <sub>ac</sub>

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				1mA to 100mA
		Overload protection of transformers and associated circuits	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.17	Upto600V Upto 20A Upto 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.19	Upto600V Upto 20A Upto 400°C 1μΩ to 19.99 kΩ
		Stability and Mechanical Hazards	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.20	Upto 196.10N 0.01°to 90°
		Mechanical Strength	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.21	0.5J, 500gm Ball: 50mm 196.10N 1Nm to 5Nm 10cNmto50cNm
		Verification of Construction	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.22	0.1Nto500N 0.01mm to 300mm Ambient 300°C 1kg,2kg,3kg,5kg Qualitative
		Internal wiring	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.23	Upto 25mm 0.01mm to 300mm Upto 5 kV <sub>ac</sub> Upto6kV <sub>dc</sub> Upto 300V Upto 30A
		Verification of Components	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.24	Qualitative
		Supply connection and external flexible cords	IEC 60335-2-12:2002+A1:2008+A2:2017, Cl.25	Upto 300mm Upto 5 kV <sub>ac</sub> Upto6kV <sub>dc</sub> 1mA to 100mA 1μΩ to 19.99KΩ

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				1Nm to 5Nm 10cNmto50cNm Upto230V Upto30A
		Terminals for external conductors	IEC 60335-2-12:2002+A1:2008+A2:2017,Cl.26	0.01mmto300 mm 0.1 Nmto5Nm
		Provision for earthing	IEC 60335-2-12:2002+A1:2008+A2:2017,Cl.27	2A to 64 A Upto 600 mΩ
		Screws and connections	IEC 60335-2-12:2002+A1:2008+A2:2017,Cl.28	0.01mm to 300mm 1Nm to 5Nm 10 cNm to 50cNm
		Clearances and Creepage Distance	IEC 60335-2-12:2002+A1:2008+A2:2017,Cl.29	Upto196N 0.01mm to 300mm 200MHz Upto 600V <sub>rms</sub> Upto 2A
		Resistance to heat and fire	IEC 60335-2-12:2002+A1:2008+A2:2017,Cl.30	Ambient to 250°C, 20 N Ambient to 960 °C
		Resistance to rusting	IEC 60335-2-12:2002+A1:2008+A2:2017,Cl.31	Ambient to 250°C Ambient to 50°C 35%RH to 95%RH Qualitative
13.	<b>Sewing Machine</b>	Protection against access to live parts	IEC 60335-2-28:2002,Cl.8	Qualitative
		Power input & current	IEC 60335-2-28:2002,Cl.10	Upto 20A
		Heating	IEC 60335-2-28:2002,Cl.1	Upto400°C 1.0μΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IEC 60335-2-28:2002,Cl.13	Upto 50 mA 10V to 5kV <sub>ac</sub> 10Vto6kV <sub>dc</sub> 1mA to 250mA
		Transient over voltage	IEC 60335-2-28:2002,Cl.14	Pulse 1.2/50μs 1kV to 10 kV



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		Moisture Resistance	IEC 60335-2-28:2002, Cl.15	1.5 LPM to 125 LPM Upto 50°C 35% RH to 95%RH
		Leakage Current & Electrical Strength	IEC 60335-2-28:2002, Cl.16	Up to 50 mA/ Upto 5 kV <sub>ac</sub> Upto 6kV <sub>dc</sub> Qualitative
		Overload protection of transformers and associated circuits	IEC 60335-2-28:2002, Cl.17	Upto 300 V Upto 400°C 1μΩ to 19.99kΩ
		Abnormal Operation	IEC 60335-2-28:2002, Cl.19	Qualitative 0.1°C to 400°C
		Stability and Mechanical Hazards	IEC 60335-2-28:2002, Cl.20	Qualitative 0.1°C to 400°C
		Mechanical Strength	IEC 60335-2-28:2002, Cl.21	Qualitative 0.5 J & 1 to 8J
		Verification of Construction	IEC 60335-2-28:2002, Cl.22	Qualitative
		Internal wiring	IEC 60335-2-28:2002, Cl.23	Upto 300 mm Upto 5 kV <sub>ac</sub> Upto 6kV <sub>dc</sub>
		Verification of Components	IEC 60335-2-28:2002, Cl.24	Qualitative
		Supply connection and external flexible cords	IEC 60335-2-28:2002, Cl.25	Upto 300mm Upto 5 kV <sub>ac</sub> Upto 6 kV <sub>dc</sub> Upto 196.10 N 1 Nm to 5 Nm 10cNm to 50cNm 1 μA to 50 mA
		Terminals for external conductors	IEC 60335-2-28:2002, Cl.26	Upto 300mm 1Nm to 5 Nm 10cNm to 50cNm
		Provision for earthing	IEC 60335-2-28:2002, Cl.27	2A to 64 A Upto 600 mΩ

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		Screws and connections	IEC 60335-2-28:2002, Cl.28	0.01mm to 300mm 1Nm to 5 Nm 10cNmto50cNm
		Clearances, Creepage Distances and Solid Insulation	IEC 60335-2-28:2002, Cl.29	Upto196.10 N Upto 25 mm 0.01mm to 300mm 1.2/50µs 1kV to10kV
		Resistance to heat and fire	IEC 60335-2-28:2002, Cl.30	Ambient to 250°C Upto 300 mm Ambient to 960 °C
		Resistance to rusting	IEC 60335-2-28:2002, Cl.31	35%RHto95%RH Upto 50°C Ambient to 250°C Qualitative
<b>14.</b>	<b>Humidifiers</b>	Protection against Electric shock & energy hazards	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.8	Qualitative (Upto 60V )
		Power input & current	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.10	Upto600V Upto20A Uptoto 8000W
		Heating	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.11	0.1°Cto400°C 1µΩ to 19.99kΩ
		Leakage Current & Electrical Strength at operating temperature	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.13	Up to 50 mA 10Vto5kV <sub>ac</sub> 10V to 6 kV <sub>dc</sub> 1mA to 250mA
		Transient over voltage	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.14	1.2/50µs 1kV to 10 kV
		Moisture Resistance	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.15	1.5 LPMto 125 LPM Upto 50°C 35% RH to 95% RH
		Leakage Current & Electrical Strength	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.16	Upto 50 mA 10Vto5kV <sub>ac</sub>

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				10V to 6 kV <sub>dc</sub>
		Overload protection of transformers and associated circuits	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.17	Upto 600V Upto 10A 0.1°C to 400°C 1μΩ to 19.99 kΩ
		Abnormal Operation	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.19	0.01V to 600V Upto 400°C Upto 20A 1.0 μΩ to 19.99kΩ
		Stability and Mechanical Hazards	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.20	196.10N 0.01° to 90°
		Mechanical Strength	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.21	0.5 J, 500gm Ball Diameter: 50mm 0.3N to 196.10N
		Verification of Construction	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.22	0.3N to 196.10N 0.01mm to 300mm Ambient to 250°C 1kg, 2kg, 3kg, 5kg
		Internal wiring	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.23	Upto 25mm 0.01mm to 300mm
		Verification of Components	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.24	Qualitative
		Supply connection and external flexible cords	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.25	Upto 300mm 10V to 5 kV <sub>ac</sub> Upto 6kV <sub>dc</sub> Upto 196.10 N (Pull) 0.1Nm to 5Nm
		Terminals for external conductors	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.26	Upto 25mm 0.1Nm to 5Nm
		Provision for earthing	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.27	2A to 64 A Upto 600 mΩ
		Screws and connections	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.28	0.01mm to 300mm 0.1Nm to 5Nm

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		Clearances and Creepage Distances	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.29	0.1N to 500N Upto 300mm 20V to 600 V 0.001A to 2 A
		Resistance to heat and fire	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.30	Ambient to 250°C Force: 20 N Upto 300mm Ambient to 960°C
		Resistance to rusting	IEC 60335-2-98:2002 + A1: 2004 + A2: 2008, Cl.31	Ambient to 250°C 35%RH to 95 %RH Upto 50°C
15.	<b>Electric Toys</b>	Power input	IS 15644: 2006 IEC 62115:2003, Cl. 8	0.01 V to 600V 0.0001 A to 20A 0.01W to 8000W
		Heating and abnormal operation	IS 15644: 2006 IEC 62115:2003, Cl. 9	0.1°C to 400°C Upto 25 mm
		Electric strength at operating temperature	IS 15644: 2006 IEC 62115:2003, Cl. 10	Upto 5 kV <sub>ac</sub> Upto 6kV <sub>dc</sub>
		Moisture resistance	IS 15644: 2006 IEC 62115:2003, Cl. 11	Ambient to 50°C 35 % RH to 95% RH Upto 5 kV <sub>ac</sub> Upto 6kV <sub>dc</sub>
		Electric strength at room temperature	IS 15644: 2006 IEC 62115:2003, Cl. 12	Qualitative Upto 5kV <sub>ac</sub> Upto 6kV <sub>dc</sub>
		Mechanical strength	IS 15644: 2006 IEC 62115:2003, Cl. 13	0.3J to 0.8J
		Verification of Construction	IS 15644: 2006 IEC 62115:2003, Cl. 14	0.01mm to 300mm 0.3N to 196.10N 0.01 s to 60.0 s Upto 20A Upto 600V / Upto 8000W
		Protection of cords and wires	IS 15644: 2006 IEC 62115:2003, Cl. 15	0.01mm to 300mm

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		Verification of Components	IS 15644: 2006 IEC 62115:2003, Cl. 16	Qualitative
		Screws and connections	IS 15644: 2006 IEC 62115:2003, Cl. 17	0.01mm to 300mm 1Nm to 5Nm 10cNm to 50cNm
		Clearances and Creepage Distances	IS 15644: 2006 IEC 62115:2003, Cl. 18	0.01mm to 300mm
		Resistance to heat and fire	IS 15644: 2006 IEC 62115:2003, Cl. 19	20N 0.1°C to 200°C Upto 25mm Ambient to 1000°C 0.01 s to 60 s Qualitative
<b>III.</b>	<b>CELLS AND BATTERIES</b>			
<b>1.</b>	<b>Lithium Systems Cells &amp; Batteries</b>	Insulation and wiring	IS 16046 (Part 2):2018 IEC 62133-2:2017, Cl. 5.2	Upto 1000 V <sub>dc</sub> Upto 9999 MΩ
		Charging procedure for the test purpose – First procedure	IS 16046 (Part 2):2018 IEC 62133-2:2017, Cl. 7.1.1	Upto 22V <sub>dc</sub> , 10A max
		Charging procedure for the test purpose – second procedure	IS 16046 (Part 2):2018 IEC 62133-2:2017 Cl. 7.1.2, Annex-A	Upto 22V <sub>dc</sub> , 10A max Temperature chamber: Upto 80°C
		Continuous charging at constant voltage (Cells)	IS 16046 (Part 2):2018 IEC 62133-2:2017, Cl. 7.2.1	5V, 3 A
		Case stress at high ambient temperature (battery)	IS 16046 (Part 2):2018 IEC 62133-2:2017, Cl. 7.2.2	Upto 200°C
		External Short circuit (cell)	IS 16046 (Part 2):2018 IEC 62133-2:2017, Cl. 7.3.1 , 7.1.2	60 mΩ to 100 mΩ

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		External Short circuit (Battery)	IS 16046 (Part 2):2018 IEC 62133-2:2017 Cl. 7.3.2 , 7.1.1	60 mΩ to 100 mΩ
		Free fall	IS 16046 (Part 2):2018 IEC 62133-2:2017,Cl. 7.3.3	Qualitative Upto 2000mm
		Thermal Abuse (cells)	IS 16046 (Part 2):2018 IEC 62133-2:2017,Cl. 7.3.4	Qualitative 20°C to 150°C 5°C/minutes
		Crush (cells)	IS 16046 (Part 2):2018 IEC 62133-2:2017 Cl. 7.3.5,7.1.2	Qualitative Upto 15KN Voltage: 5V Scale: Upto150mm
		Overcharging of battery	IS 16046 (Part 2):2018 IEC 62133-2:2017,Cl. 7.3.6	Qualitative
		Forced discharge (cells)	IS 16046 (Part 2):2018 IEC 62133-2:2017,Cl. 7.3.7	Qualitative Voltage: 5 V Current: 16A
		Vibration	IS 16046 (Part 2):2018 IEC 62133-2:2017 Cl. 7.3.8.1,7.1.1	Qualitative (Armature Diameter: 240mm Rated Force:1500 kgf SINE 1500 kgf <sub>rms</sub> RANDOM Frequency Range: Upto 3200Hz Maximum Acceleration 90 'g' Veleocity:1700 mm/Sec Displacement: 38mm Pay Load Capacity:250kg)
		Mechanical Shock	IS 16046 (Part 2):2018 IEC 62133-2:2017 Cl. 7.3.8.2 along with 7.1.1.	Qualitative (Armature Diameter: 240 mm Rated Force: 1500 kgf SINE 1500 kgf <sub>rms</sub> RANDOM Frequency Range:

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				DC to 3200 Hz Maximum Peak Acceleration 180 'g' Velocity:1700 mm/Sec Displacement: 38 mm Pay Load Capacity: 250 kg)
		Small cell and battery safety information	IS 16046 (Part 2):2018 IEC 62133-2:2017, Cl. 8.2	Qualitative
		Verification of Cell Marking	IS 16046 (Part 2):2018 IEC 62133-2:2017 Cl. 9.1 as per IEC 61960	Qualitative
		Verification of Battery Marking	IS 16046 (Part 2):2018 IEC 62133-2:2017 Cl. 9.2 as per IEC 61960	Qualitative
		Packaging and Transport	IS 16046 (Part 2):2018 IEC 62133-2:2017 Cl. 10	Qualitative
		Measurement of the internal resistance for coin cells	IS 16046 (Part 2):2018 IEC 62133-2:2017 Annex D	1999 $\mu\Omega$ to 19.99k $\Omega$
<b>2.</b>	<b>Nickel Systems Cells &amp; Batteries</b>	Insulation and wiring	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 5.2	Upto1000 V <sub>dc</sub> Upto 9999 M $\Omega$
		Charging procedure for the test purpose	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.1	Upto 22V <sub>dc</sub> , 10A max
		Continuous Low – rate charging	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.2.1	5V, 3 A
		Vibration	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.2.2	Qualitative (Armature Diameter:240 mm Rated Force:1500 Kgf SINE1500 Kgf <sub>rms</sub> RANDOM

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				Frequency Range: Upto 3200Hz Maximum Acceleration 90 'g' Velocity:1700mm/Sec Displacement:38mm Pay Load Capacity:250Kg)
		Case stress at high ambient temperature (Batteries)	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.2.3	Ambient to 200°C
		Temperature cycling	IS 16046 (Part 1):2018 IEC 62133-1:2017,Cl. 7.2.4	Qualitative (-)25°C to 85°C
		Incorrect Installation (Cells)	IS 16046 (Part 1):2018 IEC 62133-1:2017,Cl. 7.3.1	Qualitative Maximum 16A CC/CV @ 5V max Resistance: 1Ω
		External Short Circuit	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.3.2	60 mΩ to 100 mΩ
		Free fall	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.3.3	Qualitative Upto 2000 mm
		Mechanical shock (Crash Hazard)	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.3.4	Qualitative (Armature Diameter:240 mm Rated Force:1500 Kgf SINE1500 Kgf <sub>rms</sub> RANDOM Frequency Range: DC to 3200Hz Maximum Peak Acceleration 180 'g' Velocity:1700mm/Sec Displacement: 38mm Pay Load Capacity:250Kg)

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		Thermal Abuse (Cells)	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.3.5	Qualitative 20°C to 150°C 5°C/minutes
		Crushing of cells	IS 16046 (Part 1):2018 IEC 62133-1:2017 Cl. 7.3.6	Qualitative Upto 15KN Voltage: 5V
		Low Pressure	IS 16046 (Part 1):2018 IEC 62133-1:2017, Cl. 7.3.7	Qualitative (11.6 kPa)
		Overcharge	IS 16046 (Part 1):2018 IEC 62133-1:2017, Cl. 7.3.8	Qualitative Upto 24V Upto 25A
		Forced discharge (cells)	IS 16046 (Part 1):2018 IEC 62133-1:2017, Cl. 7.3.9	Qualitative Voltage : 5 V Current: 16A
		Small cell and battery safety information	IS 16046 (Part 1):2018 IEC 62133-1:2017, Cl. 8.2	Qualitative
		Verification of Cell Marking	IS 16046 (Part 1):2018 IEC 62133-1:2017, Cl. 9.1	Qualitative
		Verification of Battery Marking	IS 16046 (Part 1):2018 IEC 62133-1:2017, Cl. 9.2	Qualitative
		Verification of Packaging	IS 16046 (Part 1):2018 IEC 62133-1:2017, Cl. 10	Qualitative
<b>IV.</b>	<b>EMI/EMC TESTING FACILITY</b>			
<b>1.</b>	<b>Electrical / Electronic / Tele Communication Product</b>	Harmonic Current Emission	IEC 61000-3-2 BS EN 61000-3-2 IS 14700 (Part 3/Sec 2) TEC/SD/DD/EMC-221/05/OCT-16	Upto 40 <sup>th</sup> Upto 20A Upto 600V
		Electrostatic Discharge Immunity	IEC 61000-4-2 : 2008 BS EN 61000-4-2 IS 14700 (Part 4/Sec 2) : 2018	Qualitative 20 kV air (Positive and Negative) 20 kV Contact

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			TEC/SD/DD/EMC-221/05/OCT-16	(Positive and Negative)
		Electrical Fast Transient (EFT)/Burst Immunity Test (Power Line & Signal Line)	IEC 61000-4-4 : 2012 BS EN 61000-4-4 IS 14700 (Part 4/Sec 4) : 2012	Qualitative 16 A and Upto 4.8 kV (Positive and Negative)
		High Energy/Telecom Surge Immunity	IEC 61000-4-5 : 2005 BS EN 61000-4-5 IS 14700 (Part 4/Sec 5) : 2012 TEC/SD/DD/EMC-221/05/OCT-16	Qualitative Upto 16A, Upto 6 kV (Positive and Negative)
		Voltage dips, short interruption & voltage variations Immunity	IEC 61000-4-11 : 2004 BS EN 61000-4-11 IS 14700 (Part 4/Sec 11) : 2008 TEC/SD/DD/EMC-221/05/OCT-16	Qualitative (Upto 600V)

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**ELECTRONICS TESTING**

I.	<b>SAFETY TESTING FACILITY</b>			
1.	<b>Fixed general-Purpose Luminaires</b>	Verification of marking	IS 10322(Part 5/Sec 1) : 2012, Cl. 6 (Part 5/Sec 2): 2012 Cl. 6 (Part 5/Sec 3): 2012 Cl. 6 (Part 5/Sec 4): 2012 Cl. 5 (Part 5/Sec 5): 2012 Cl. 6 (Part 5/Sec 6): 2012 Cl. 6 (Part 5/Sec 7): 2012 Cl. 6 (Part 5/Sec 8): 2012 Cl. 6 IS 10322 (Part 1): 2014 Sec 3	Qualitative
		Verification of construction	IS 10322 (Part 5/Sec 1) : 2012, Cl. 7 IS 10322 (Part 5/Sec 2): 2012, Cl. 7 IS 10322 (Part 5/Sec 3): 2012, Cl. 7 IS 10322 (Part 5/Sec 4): 1987(RA 2005), Cl. 6 IS 10322 (Part 2): 2012 IS 10322 (Part 5/Sec 5): 2012 Cl. 7 IS 10322 (Part 5/Sec 6): 2012 Cl. 7 IS 10322 (Part 5/Sec 7): 2012 Cl. 7 IS 10322 (Part 5/Sec 8): 2012 Cl. 7 IS 10322 (Part 1): 2014 Sec 4	0.01 mm to 150 mm 0.1 Nm to 5 Nm

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		Creepage distances & clearances	IS 10322(Part 5/Sec 1): 2012, Cl 8 IS 10322 (Part 5/Sec 2): 2012, Cl. 8 IS 10322 (Part 5/Sec 3): 2012, Cl. 8 IS 10322 (Part 5/Sec 4): 1987(RA 2005), Cl. 7 IS 10322 (Part 5/Sec 5): 2012, Cl. 8 IS 10322 (Part 5/Sec 6): 2012, Cl. 8 IS 10322 (Part 5/Sec 7): 2012, Cl. 8 IS 10322 (Part 5/Sec 8): 2012, Cl. 8 IS 10322 (Part 1): 2014 Sec 11	Upto 150 mm
		Provision for earthing	IS 10322 (Part 5/Sec 1) : 2012, Cl 9 IS 10322 (Part 5/Sec 2): 2012, Cl. 9 IS 10322 (Part 5/Sec 3): 2012, Cl. 9 IS 10322 (Part 5/Sec 4): 2012, Cl. 8 IS 10322 (Part 5/Sec 5): 2012, Cl. 9 IS 10322 (Part 5/Sec 6): 2012, Cl. 9 IS 10322 (Part 5/Sec 7): 2012, Cl. 9 IS 10322 (Part 5/Sec 8): 2012, Cl. 9, IS 10322 (Part 1): 2014, Sec 7	0.1 to 64 A 0.1V to 12 V Upto 600 mΩ

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		Terminals	IS 10322(Part 5/Sec 1) : 2012, Cl 10 IS 10322 (Part 5/Sec 2): 2012, Cl. 10 IS 10322 (Part 5/Sec 3): 2012, Cl. 10 IS 10322 (Part 5/Sec 4): 2012, Cl. 9 IS 10322 (Part 5/Sec 5): 2012, Cl. 10 IS 10322 (Part 5/Sec 6): 2012, Cl. 10 IS 10322 (Part 5/Sec 7): 2012, Cl. 10 IS 10322 (Part 5/Sec 8): 2012, Cl. 10 IS 10322 (Part 1): 2014 Sec 14,15	Qualitative (0.1 Nm to 5 Nm)
		External & Internal Wiring	IS 10322 (Part 5/Sec 1) : 2012, Cl 11 IS 10322 (Part 5/Sec 2): 2012, Cl. 11 IS 10322 (Part 5/Sec 3): 2012, Cl. 11 IS 10322 (Part 5/Sec 4): 2012, Cl. 10 IS 10322 (Part 5/Sec 5): 2012, Cl. 11 IS 10322 (Part 5/Sec 6): 2012, Cl. 11 IS 10322 (Part 5/Sec 7): 2012, Cl. 11 IS 10322 (Part 5/Sec 8): 2012, Cl. 11, IS 10322 (Part 1): 2014, Sec 5	1 mm to 150 mm 0.1 Nm to 5 Nm

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		Protection against electric shock	IS 10322(Part 5/Sec 1) : 2012, Cl. 12 IS 10322 (Part 5/Sec 2): 2012, Cl. 12 IS 10322 (Part 5/Sec 3): 2012, Cl. 12 IS 10322 (Part 5/Sec 4): 2012, Cl. 11 IS 10322 (Part 5/Sec 5): 2012, Cl. 12 IS 10322 (Part 5/Sec 6): 2012, Cl. 12 IS 10322 (Part 5/Sec 7): 2012, Cl. 12 IS 10322 (Part 5/Sec 8): 2012, Cl. 12 IS 10322 (Part 1): 2014 Sec 8	Qualitative
		Endurance and thermal test	IS 10322(Part 5/Sec 1) : 2012, Cl. 13 IS 10322 (Part 5/Sec 2): 2012 Cl. 13 IS 10322 (Part 5/Sec 3): 2012 Cl. 13 IS 10322 (Part 5/Sec 4): 2012 Cl. 13.4 IS 10322 (Part 5/Sec 5): 2012 Cl. 13 IS 10322 (Part 5/Sec 6): 2012, Cl. 13 IS 10322 (Part 5/Sec 7): 2012, Cl. 13 IS 10322 (Part 5/Sec 8): 2012, Cl. 13, IS 10322 (Part 1): 2014, Sec 12	1 V to 150 Vdc 1 V to 300 Vac 25 °C to 250 °C

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		Resistance to dust, solid objects & moisture	IS 10322 (Part 5/Sec 1) : 2012 Cl 14 IS 10322 (Part 5/Sec 2): 2012 Cl. 14 IS 10322 (Part 5/Sec 3): 2012 Cl. 14 IS 10322 (Part 5/Sec 4): 2012 Cl. 13.5 IS 10322 (Part 5/Sec 5): 2012 Cl. 14 IS 10322 (Part 5/Sec 6): 2012 Cl. 14 IS 10322 (Part 5/Sec 7): 2012 Cl. 14 IS 10322 (Part 5/Sec 8): 2012 Cl. 14, IS 10322 (Part 1): 2014, Sec 9	Up to IP 68, Ambient to 50 °C 65 % RH to 98 % RH
		Insulation resistance and electric strength	IS 10322 (Part 5/Sec 1) : 2012, Cl 15 IS 10322 (Part 5/Sec 2): 2012, Cl. 15 IS 10322 (Part 5/Sec 3): 2012, Cl. 15 IS 10322 (Part 5/Sec 4): 2012, Cl. 13.6 IS 10322 (Part 5/Sec 5): 2012, Cl. 15 IS 10322 (Part 5/Sec 6): 2012, Cl. 15 IS 10322 (Part 5/Sec 7): 2012 Cl. 15 IS 10322 (Part 5/Sec 8): 2012, Cl. 15, IS 10322 (Part 1): 2014, Sec 10	1 MΩ to 9999 MΩ 500 V DC to 1.5 kV DC  0.1 kV AC to 5 kV AC 0.01 mA to 100 mA

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		Resistance to heat, fire and tracking	IS 10322(Part 5/Sec 1) : 2012, Cl 16 IS 10322 (Part 5/Sec 2): 2012, Cl. 16 IS 10322 (Part 5/Sec 3): 2012, Cl. 16 IS 10322 (Part 5/Sec 4): 2012, Cl. 13.7 IS 10322 (Part 5/Sec 5): 2012, Cl. 16 IS 10322 (Part 5/Sec 6): 2012, Cl. 16 IS 10322 (Part 5/Sec 7): 2012, Cl. 16 IS 10322 (Part 5/Sec 8): 2012, Cl. 16 IS 10322 (Part 1): 2014 Sec 13	20 N, Ball Diameter: 5 mm, Upto 600 V AC, Ambient to 1200 °C 0.1 s to 60 minutes
2.	<b>Emergency Light</b>	Changeover Operation	IS 10322: 2012 (Part 5 / Sec. 8), Cl. 18	Qualitative
		High Temperature operation	IS 10322: 2012 (Part 5 / Sec. 8) Cl. 19	Ambient to 250 °C
		Battery charger for self contained emergency Luminaires	IS 10322: 2012 (Part 5 / Sec. 8) ,Cl. 20	1 V to 300 V
		Test Device for Emergency Operation	IS 10322: 2012 (Part 5 / Sec. 8) ,Cl. 21	Qualitative
		Rest mode and inhabitation mode facility	IS 10322: 2012 (Part 5/ Sec. 8) ,Cl. 22	Qualitative
3.	<b>Portable General-Purpose Luminaires</b>	Visual Examination	IS 10322:2012 (Part 5/ Sec 4), Cl 13.2, 13.3,13.4	1 V to 150 Vdc 1 V to 300 Vac Ambient to 250 °C
		Mechanical Strength	IS 10322:2012 (Part 5/Sec 4), Cl 13.3	1 N to 250 N



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		Endurance and Thermal Test	IS 10322:2012 (Part 5/ Sec 4 ), Cl 13.4	1 V to 150 Vdc 1 V to 300 Vac 25 °C to 250 °C
4.	Lamp Control Gear D.C or A.C Supplied Electronic Control Gear for LED Modules	Verification of marking	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 7 IS 15885 (Part 1): 2011, Cl. 7.2 IEC 61347 (Part 2/Sec 13): 2014, Cl 7	Qualitative
		Protection Against Accidental Contact with Live Parts	IS 15885(Part 2/Sec 13): 2012 +A1:2015, Cl. 8 IS 15885(Part 1):2011,Cl10 IEC 61347(Part 2/Sec 13): 2014 ,Cl 8	Qualitative
		Terminals	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 9 IS 15885(Part 1): 2011, Cl. 8 IEC 61347(Part 2/Sec 13): 2014, Cl. 9	Upto 150 mm, Upto 20 N
		Provision For Protective Earthing	IS 15885(Part 2/Sec 13): 2012+A1:2015, Cl. 10 IS 15885 (Part 1): 2011 Cl. 9 IEC 61347(Part 2/Sec 13): 2014, Cl. 10	0.1 A to 64 A 0.1V to 12 V Upto 600 mΩ
		Moisture Resistance and insulation	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 11 IS 15885(Part 1): 2011, Cl.11 IEC 61347(Part 2/Sec 13): 2014, Cl. 11	Ambient to 50 °C 65 % RH to 98 % RH  1 MΩ to 9999 MΩ 0.5 kV DC to 1.5 kV DC
		Electric Strength	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 12	0.1 kV AC to 5 kV AC 0.01 mA to 100 mA

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			IS 15885 (Part 1): 2011, Cl. 12 IEC 61347(Part 2/Sec 13): 2014, Cl. 12	
		Thermal Endurance Test for Winding of Ballasts	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 13 IS 15885 (Part 1): 2011, Cl. 13 IEC 61347 (Part 2/Sec 13): 2014, Cl. 13	35 °C to 100 °C
		Fault Conditions	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl.14 IS 15885 (Part 1): 2011, Cl.14 IEC 61347(Part 2/Sec 13): 2014, Cl. 14	Upto 600 V, Upto 20 A, P.F. (-)1.00 to 1.00
		Transformer Heating	IS 15885 (Part 2/Sec 13): 2012+A1:2015, Cl. 15 IS 15885 (Part 1): 2011, Cl. 10.4, M-6, M-7 IEC 61347 (Part 2/Sec 13): 2014, Cl. 15	Upto 200 °C Upto 20 A
		Verification of construction	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 16 IS 15885 (Part 1): 2011, Cl. 15, IEC 61347 (Part 2/Sec 13): 2014, Cl. 16	Qualitative
		Creepage Distance and Clearances	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 17 IS 15885 (Part 1): 2011, Cl. 16 IEC 61347(Part 2/Sec 13): 2014, Cl. 17	Upto 150 mm
		Screws, Current-Carrying Parts And	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 18	0.1 Nm to 5 Nm

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		Connections	IS 15885 (Part 1): 2011, Cl. 17 IEC 61347(Part 2/Sec 13): 2014, Cl. 18	
		Resistance To Heat, Fire and Tracking	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 19 IS 15885 (Part 1): 2011, Cl. 18 IEC 61347(Part 2/Sec 13): 2014, Cl. 19	20N, Ball Diameter: 5 mm, Upto 600 V AC, Ambient to 1200 °C 0.1 s to 60 minutes
		Resistance to Corrosion	IS 15885 (Part 2/Sec 13): 2012 +A1:2015, Cl. 20 IS 15885 (Part 1): 2011, Cl. 19 IEC 61347(Part 2/Sec 13): 2014, Cl. 20	Upto 50 °C, 65%RH to 95%RH
5.	<b>Luminaires</b>	Verification of marking	IEC/BS EN 60598-2-1 (Ed. 1): 1979 +A-1987, Cl. 1.5 IEC/BS EN 60598-2-2 (Ed. 3.0): 2011-11, Cl. 2.6 IEC/BS EN 60598-2-3 (Ed. 3): 2002-12, Cl. 3.5 IEC/BS EN 60598-2-4 (Ed. 3): 1997-04, Cl. 4.5 IEC/BS EN 60598-2-5 (Ed. 3): 2015-08, Cl. 5.5 IEC/BS EN 60598-2-7 Ed. 1):1994, Cl. 7.5 IEC/BS EN 60598-2-8 (Ed. 3): 2013-04, Cl. 8.6 IEC/BS EN 60598-1 (Ed. 8.0): 2014-5 Section 3	Qualitative
		Verification of construction	IEC/BS EN60598-2-1 (Ed. 1): 1979 +A-1987,	Qualitative

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			Cl. 1.6 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11, Cl. 2.7 IEC/BS EN60598-2-3 (Ed. 3): 2002-12, Cl. 3.6 IEC/BS EN60598-2-4 (Ed. 3): 1997-04, Cl. 4.7 IEC/BS EN60598-2-5 (Ed. 3): 2015-08, Cl. 5.6 IEC/BS EN60598-2-7, (Ed.1):1994, Cl. 7.6 IEC/BS EN60598-2-8 (Ed. 3): 2013-04 Cl. 8.7 IEC/BS EN60598-1 (Ed. 8.0): 2014-5, Section 4	
		External And Internal Wiring	IEC/BS EN60598-2-1 (Ed. 1): 1979 +A-1987, Cl. 1.10 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11, Cl. 2.11 IEC/BS EN60598-2-3 (Ed. 3): 2002-12, Cl. 3.10 IEC/BS EN60598-2-4 (Ed. 3): 1997-04, Cl. 4.9 IEC/BS EN60598-2-5 (Ed. 3): 2015-08, Cl. 5.10 IEC/BS EN60598-2-7, (Ed.1):1994, Cl. 7.10 IEC/BS EN60598-2-8 (Ed. 3): 2013-04 Cl. 8.11 IEC/BS EN60598-1 (Ed. 8.0):2014-05, Section 5	1 mm to 150 mm 0.1 Nm to 5 Nm
		Provision for Earthing	IEC/BS EN60598-2-1 (Ed. 1) Amd.1:1987, Cl. 1.8 IEC/BS EN60598-2-2	0.1 mΩ to 600 mΩ

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			(Ed. 3.0): 2011-11Cl. 2.9 IEC/BS EN60598-2-3 (Ed. 3.1): 2011-11),Cl. 3.8 IEC/BS EN60598-2-4 (Ed. 2): 1997-04,Cl. 4.9 IEC/BS EN60598-2-5 (Ed. 3): 2015, Cl. 5.8 IEC/BS EN60598-2-7 (Ed. 1): 1994, Cl. 7.8 IEC/BS EN60598-2-8 (Ed. 3): 2013,Cl. 8.9 IEC/BS EN60598-1 (Ed. 8.0):2014-05 Section 7	
		Protection Against Electric Shock	IEC/BS EN60598-2-1 (Ed. 1): 1987, Cl. 1.11 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11,Cl. 2.12 IEC/BS EN60598-2-3 (Ed. 3.1): 2011-11,Cl. 3.11 IEC/BS EN60598-2-4 (Ed. 2): 1997-04,Cl. 4.12 IEC/BS EN60598-2-5 (Ed. 3): 2015 Cl. 5.11 IEC/BS EN60598-2-7 (Ed. 1):1994,Cl. 7.11 IEC/BS EN60598-2-8 (Ed. 3): 2013 Cl. 8.12 IEC/BS EN60598-1 (Ed.8.0): 2014-05,Section 8	Upto 20 mA
		Resistance to Dust, Solid Objects And Moisture	IEC/BS EN60598-2-1 (Ed. 1): 1987 Cl. 1.13 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11,Cl. 2.14 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11,Cl. 2.14	Test Probe Dust proof chamber work space: 1 m <sup>3</sup> Test Sieve 75µm Upto 20 mbar 1mm/min,6 mm/min, 12.5

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			IEC/BS EN60598-2-3 (Ed. 3.1): 2011-11, Cl. 3.13 IEC/BS EN60598-2-4 (Ed. 2): 1997-04, Cl. 4.14 IEC/BS EN60598-2-5 (Ed. 3): 2015, Cl. 5.13 IEC/BS EN60598-2-7 (Ed. 1): 1994, Cl. 7.13 IEC/BS EN60598-2-8 (Ed. 3): 2013, Cl. 8.14 IEC/BS EN60598-1 (Ed. 8.0): 2014-05 Section 9	l/min, 10l/min, 100 l/min 15 ° & 60 °
		Insulation Resistance and Electric Strength, Touch Current And Protective Conductor Current	IEC/BS EN60598-2-1 (Ed. 1): 1987, Cl. 1.14 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11, Cl. 2.15 IEC/BS EN60598-2-3 (Ed. 3.1): 2011-11, Cl. 3.14 IEC/BS EN60598-2-4 (Ed. 2): 1997-04, Cl. 4.14 IEC/BS EN60598-2-4 (Ed. 2): 1997-04, Cl. 4.15 IEC/BS EN60598-2-5 (Ed. 3): 2015 Cl. 5.14 IEC/BS EN60598-2-7 (Ed. 1): 1994, Cl. 7.14 IEC/BS EN60598-2-8 (Ed. 3): 2013 Cl. 8.15 IEC/BS EN60598-1 (Ed.8.0): 2014-05, Section 10	1 MΩ to 9999 MΩ 0.1 kV AC to 5.00 kV AC 0.1 kV DC to 6 kV DC upto 50mA
		Creepage Distance and Clearances	IEC/BS EN60598-2-1 (Ed. 1): 1987, Cl. 1.7 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11, Cl. 2.7	0.01 mm to 150 mm

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			IEC/BS EN60598-2-3 (Ed. 3.1): 2011-11, Cl. 3.7 IEC/BS EN60598-2-4 (Ed. 2): 1997-04, Cl. 4.8 IEC/BS EN60598-2-5 (Ed. 3): 2015 Cl. 5.7 IEC/BS EN60598-2-7 (Ed. 1): 1994, Cl. 7.7 IEC/BS EN60598-2-8 (Ed. 3): 2013, Cl. 8.7 IEC/BS EN60598-1 (Ed. 8.0): 2014-05, Section 11	
		Endurance and Thermal	IEC/BS EN60598-2-1 (Ed. 1): 1987, Cl. 1.12 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11, Cl. 2.13 IEC/BS EN60598-2-3 (Ed. 3.1): 2011-11, Cl. 3.12 IEC/BS EN60598-2-4 (Ed. 2): 1997-04, Cl. 4.13 IEC/BS EN60598-2-5 (Ed. 3): 2015 Cl. 5.12 IEC/BS EN60598-2-7 (Ed. 1): 1994, Cl. 7.12 IEC/BS EN60598-2-8 (Ed. 3): 2013 Cl. 8.13 IEC/BS EN60598-1 (Ed. 8.0): 2014-05, Section 12	Ambient to 200°C 15 °C to 200 °C Upto 600 V, Upto 12 kW Upto 20 A
		Resistance To Heat, Fire And Tracking	IEC/BS EN60598-2-1 (Ed. 1): 1987, Cl. 1.15 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11, Cl. 2.16 IEC/BS EN60598-2-3	35 °C to 300 °C Ball Diameter: 5 mm 20.0 N 0.01 mm to 150 mm 550°C to 960°C

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			(Ed. 3.1): 2011-11, Cl. 3.15 IEC/BS EN60598-2-4 (Ed. 2): 1997-04, Cl. 4.15 IEC/BS EN60598-2-5 (Ed. 3): 2015, Cl. 5.15 IEC/BS EN60598-2-7 (Ed. 1): 1994, Cl. 7.15 IEC/BS EN60598-2-8 (Ed. 3): 2013, Cl. 8.16 IEC/BS EN60598-1 (Ed. 8.0): 2014-05, Section 13	0.1 s to 60 minutes
		Terminals/Screw Terminals/ Screw Less Terminals And Electrical Connections	IEC/BS EN60598-2-1 (Ed. 1): 1979 +A-1987, Cl. 1.9 IEC/BS EN60598-2-2 (Ed. 3.0): 2011-11, Cl. 2.10 IEC/BS EN60598-2-3 (Ed. 3.1): 2011-11, Cl. 3.9 IEC/BS EN60598-2-4 (Ed. 2): 1997-04, Cl. 4.9 IEC/BS EN60598-2-5 (Ed. 3): 2015, Cl. 5.9 IEC/BS EN60598-2-7 (Ed. 1): 1994, Cl. 7.9 IEC/BS EN60598-2-8 (Ed. 3): 2013, Cl. 8.10 IEC/BS EN60598-1 (Ed. 8.0): 2014-05, Section 14 & 15	0.2 Nm to 6 Nm
6.	<b>Self Ballasted LED Lamps for General Lighting Services</b>	Verification of marking	IS 16102 (Part 1): 2012, Cl. 5, IEC 62560:2011, sec.5	Qualitative
		Cap Interchangeability Bending Moment and axial pull and mass	IS 16102 (Part 1): 2012 Cl. 6.1, 6.2 IEC 62560:2011, Sec.6	Qualitative



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		Protection against accidental contact with live part	IS 16102 (Part 1) : 2012, Cl. 7 IEC 62560:2011 sec.7	Upto 200 N Upto 150 mm
		Insulation resistance and Electric Strength after humidity treatment	IS 16102 (Part 1) : 2012, Cl. 8 IEC 62560:2011 sec.8	0.100 MΩ to 9999 MΩ 0.5 kV AC to 10 kV AC 0.01 μA to 100 mA
		Mechanical Strength	IS 16102 (Part 1): 2012, Cl. 9 IEC 62560:2011, Sec.9	1 N to 250 N
		Cap Temperature rise	IS 16102 (Part 1): 2012, Cl. 10 IEC 62560:2011 Sec.10	Ambient to 100 °C
		Resistance to heat	IS 16102 ( Part 1) : 2012, Cl. 11 IEC 62560:2011 Sec.11	0.1°C to 250°C
		Resistance to flame and ignition	IS 16102 ( Part 1) : 2012, Cl.12 IEC 62560:2011 Sec.12	35°C to 960 °C 1 V to 600 V 550 °C to 960 °C 0.1 s to 60 minute
		Fault condition	IS 16102 (Part 1): 2012, Cl. 13.2 to 13.6 IEC 62560:2011, Sec.13	Upto 600 V, Upto 12 kW Upto 20 A, (-)1.00 P.F. to 1.00 P.F.
		Creepage distance & clearance	IS 16102 (Part 1): 2012 Cl.14 IEC 62560:2011 Sec.14	1 mm to 150 mm
		Protection against accidental contact with live parts	IEC 62560:2011, Sec.7	Qualitative
7.	<b>Enclosures for Electrical, Electronics Products</b>	<b>Degree of protection</b> IP 1X,IP 2X,IP 3X,IP 4X IP 5X,IP 6X, IP X1, IP X2, IP X3, IP X4, IP X5, IP X6, IP X7	IS/IEC 60529: 2001	Qualitative

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II.	<b>DOMESTIC ELECTRONIC APPLIANCES &amp; ACCESSORIES</b>			
1.	<b>TV, Desktop Computer, Laptop, External Power Adapter, Battery Charger, Audio Equipment, Combination Unit, Office equipment's (Printers, Scanners, Copiers, Fax Machines and Multi-Function Devices)</b>	Standby Power	IEC 62301 (1st Edition): 2005-06 IEC 62301 (2nd Edition): 2011	1V to 600Vac 1 V to 600Vdc 1 A to 20 A ac 0.5 A to 20A dc 1 W to 12 kW 1 Whr to 100 Whr
2.	<b>Television</b>	Power consumption	IEC 62087: 2015 (Part 1-Part 5) BEE Schedule 11	1V to 600Vac 1 V to 600Vdc 1 A to 20 A ac 0.5 A to 20A dc 1 W to 12 kW 1 Whr to 100 Whr 1.0 lux to 2000 lux
3.	<b>Desk Top Computers/ Notebook Computers</b>	Power Measurement in Off Mode, Sleep Mode, and Idle state	Energy Star Program requirements for Computers Ver 5.0/5.2 IEC 62301 (1st Edition): 2005-06 IEC 62301 (2nd Edition): 2011	1V to 600Vac 1 V to 600Vdc 1 A to 20 A ac 0.5 A to 20A dc 1 W to 12 kW 1 Whr to 100 Whr

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III.	<b>ELECTRONIC COMPONENTS &amp; EQUIPMENT SUB ASSEMBLIES</b>			
1.	<b>Mobile Phone</b>	Indian Language Support for Mobile handsets	IS 16333 (Part 3):2016	Qualitative
IV.	<b>POWER SUPPLIES &amp; STABILIZERS</b>			
1.	<b>Uninterruptible Power Systems (UPS)</b>	Power Interface	IS 16242-1:2014, CI No. 4.6	1 V to 600Vac 1 V to 600Vdc 1 A to 20 A ac 1 A to 20A dc
		Discharge of capacitors in the primary circuit	IS 16242-1:2014, CI No. 5.1.1	2 mV to 500 mV At 1 kHz 1.2 $\mu$ s to 50 s Upto 300 VA
		SELV	IS 16242-1:2014, CI No. 5.2.1	2 to 500 mV At 1 kHz 1.2 $\mu$ s to 50 s Upto 300 VA
		Limited current circuit	IS 16242-1:2014, CI No. 5.2.3	1 mA to 20A 1V to 600 V 60 V/20 A/300 W
		Resistance of earthing measurement	IS 16242-1:2014, CI No. 5.3.2	5 A to 40 A 0.1 m $\Omega$ to 600 m $\Omega$
		Working voltage	IS 16242-1:2014, CI No. 5.7	1V to 1000 V
		Clearance and creep age distance	IS 16242-1:2014, CI No. 5.7	0.01 mm to 150 mm
		Enclosure opening	IS 16242-1:2014, CI. RD 4.6	1° to 90° Upto 150 mm
		Temperature rise	IS 16242-1:2014, CI. RD 4.5	Ambient to 200 °C

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		Earth leakage current	IS 16242-1:2014, Cl. 4.7.13/ RD-5.1	0.01mA to 100 mA
		Electric strength	IS 16242-1:2014, Cl. RD-5.2	1 MΩ to 9999 MΩ 500 V DC to 1.5 kV DC
		Durability of markings	IS 16242-1:2014, Cl. RD-1.7	Qualitative
		Access to energized parts	IS 16242-1:2014, Cl. RD-2	Qualitative
		Back feed protections	IS 16242-1:2014, Cl. 4.7.3.5	Qualitative
		Limited power source	IS 16242-1:2014, Cl. RD-2.5	1 mA to 20A 1 V to 600 V 60 V/20 A/300 W
		Stability	IS 16242-1:2014, Cl. RD-4	1° to 90° 1 N to 250 N
		Steady force test	IS 16242-1:2014, Cl. RD-4.2	1 N to 250 N
		Impact test	IS 16242-1:2014, Cl. RD-4.2.5	Qualitative
		Drop test	IS 16242-1:2014, Cl. RD-4.2.6	Qualitative
		Stress relief	IS 16242-1:2014, Cl. RD 4.2.7	Upto 200 °C
		Resistance to fire	IS 16242-1:2014, Cl. RD-4.7	1°C to 1200 °C ,0.1 Sec to 60 Sec
		Ball pressure test of thermoplastic parts	IS 16242-1:2014, Cl. RD-4.7	0.1°C to 250°C
2.	<b>AC/DC Adapters for household</b>	Verification of marking and instruction	IS 302-1:2008, Cl. 7	Qualitative
		Protection against access to live parts	IS 302-1:2008, Cl. 8	Qualitative
		Power input and current	IS 302-1:2008, Cl. 10	Upto 600 V Upto 20A Upto 12 kW

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Heating	IS 302-1:2008, Cl.11	Ambient to 200 °C
		Leakage current and Electric strength at operating temperature	IS 302-1:2008, Cl.13	1 MΩ to 9999 MΩ 500 V DC to 1.5 kV DC 0.01 to 100 mA & 0.1 kV to 5 kV
		Transient over voltage	IS 302-1:2008, Cl.14	0.1 kV to 7 kV
		Abnormal operation	IS 302-1:2008, Cl.19	Qualitative
		Stability and mechanical hazards	IS 302-1:2008, Cl.20	Upto 50 <sup>0</sup>
		Mechanical strength	IS 302-1:2008, Cl.21	1 N to 250 N
		Verification of construction	IS 302-1:2008 Cl No. 22	Qualitative
		Supply connection and External flexible cords	IS 302-1:2008 Cl No. 25	Upto 150 mm 1 N to 250 N 90° Angle/5 N, 10 N
		Terminal for external conductors	IS 302-1:2008, Cl. 26	Upto 150 mm
		Provision for earthing	IS 302-1:2008, Cl. 27	0.1 A to 64 A 0.1V to 12 V Upto 600 mΩ
		Screw and connection	IS 302-1:2008, Cl. 28	0.1 Nm to 6 Nm
		Clearance creepage distances and solid insulation	IS 302-1:2008, Cl. 29	Upto 150 mm
		Resistance to heat and fire	IS 302-1:2008, Cl. 30	20N, Ball Diameter: 5 mm, Upto 600 V AC, Ambient to 1200 °C, 0.1 s to 60 minutes
<b>V.</b>	<b>INFORMATION TECHNOLOGY EQUIPMENTS</b>			
<b>1.</b>	<b>Laptop/Notebook/ Tablets, Mail Processing</b>	Verification of Components	IS 13252 (Part 1): 2010 IEC 60950-1:2005 (Cl. 1.5)	Qualitative

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	<b>Machines/Postage Machines/ Franking Machines, Scanners, Passport Reader, Copying Machines/ Duplicators, Mobile Phones, Cash Registers</b>	Power Interface	IS 13252 (Part 1): 2010 IEC60950-1: 2005,Cl.1.6	1 mA to 20A 1 V to 600 V 1 W to 1200W
		Verification of marking and instructions	IS 13252 (Part 1): 2010 IEC 60950-1:2005, Cl. 1.7	Qualitative
		Durability	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl. 1.7.11	Qualitative
		Access to energized parts	IS 13252 (Part 1): 2010 IEC 60950-1:2005, Cl. 2.1.1.1	Qualitative
		Access to ELV wiring	IS 13252 (Part 1): 2010 IEC 60950-1: 2005,Cl. 2.1.1.3	0.01 mm to 150 mm
		Energy hazard	IS 13252 (Part 1): 2010 IEC 60950-1:2005, Cl. 2.1.1.5	1 mA to 20A 1 V to 600 V Up to 1 kHz
		Discharge of capacitors in equipment	IS 13252 (Part 1): 2010 IEC 60950-1:2005 ,Cl. 2.1.1.7	2 mV to 500 mV At 1 kHz 1.2 $\mu$ s to 50 s Upto 300 VA
		SELV circuits	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.2.2	1 mA to 20A 1 V to 600 V
		TNV circuits limits	IS 13252 (Part 1): 2010 IEC 60950-1:2005,Cl.2.3.1	Upto 200MHz 1500V <sub>pk</sub>
		Connection of TNV circuits to other circuits	IS 13252 (Part 1): 2010 IEC 60950-1: 2005 (Cl.2.3.4)	Upto 200MHz 1500V <sub>pk</sub>
		Limited current circuits limits values limited power sources	IS 13252 (Part 1): 2010 IEC60950-1:2005,Cl.2.4.2	1 mA to 20A 1 V to 600 VDC/AC 60 V/20 A/300 W
		Size of protective earthing & bonding conductor	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.2.6.3.2/2.6.3.3	0.1A to 64 A 0.1V to 12 V 1m $\Omega$ to 600 m $\Omega$

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Resistance of earthing conductors and their terminals	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.2.6.3.4	5 A to 40 A 1 mΩ to 600 mΩ
		Protection requirement for safety interlocks	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.2.8.2	Qualitative
		Humidity	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.2.9.2	Ambient to 50 °C 65 % RH to 98 % RH
		Determination of working Voltage	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.2.10.2	1 V to 600 V
		Clearances	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.2.10.3	0.01 mm to 150 mm
		Creepage distance	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.2.10.4	0.01 mm to 150 mm
		Thermal conditioning	IS 13252 (Part 1): 2010 IEC 60950-1:2005 Cl.2.10.8.2	0.1°C to 250 °C
		Thermal cycling	IS 13252 (Part 1): 2010 IEC 60950-1: 2005 Cl.2.10.9	0.1 °C to 250 °C
		Wiring connections & supply	IS 13252 (Part 1): 2010 IEC 60950-1:2005, Cl. 3.0	1 kg to 6 kg 0.01 to 150 mm
		Stability	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.4.1	1° to 90° Up to 800 N
		Mechanical Strength	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.4.2	1 N to 250 N
		Steady force test	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl. 4.2.2, 4.2.3, 4.2.4	1 N to 250 N
		Impact test	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.4.2.5	Qualitative (ø 50 mm/500 g)
		Drop test	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.4.2.6	Qualitative

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Stress relief test	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.4.2.7	0.1 °C to 250 °C
		Mechanical strength for Wall or ceiling mounted equipment	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl. 4.2.10	1 kg to 10 kg
		Verification of design & construction Handles & manual controls	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl. 4.3.2	1 N to 50 N
		Direct plug-in equipment	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl. 4.3.6	0.1 Nm to 5 Nm
		Protection against hazardous moving parts	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.4.4	Qualitative
		<b>Thermal requirement</b> Resistance to abnormal heat	IS 13252 (Part 1): 2010 IEC60950-1:2005 Cl.4.5	Ambient to 200 °C 0.1 °C to 250 °C
		Opening in enclosure	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.4.6.1, 4.6.3, 4.6.4, 4.6.5	0.01 mm to 150 mm
		Touch current & protective conductor current	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.5.1	0.01 mA to 10 mA
		Resistance to fire	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.4.7	1 °C to 1200 °C 0.1 S to 60 S
		Electric strength	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl 5.2	0.1 kV to 5 kV
		Protection from hazardous voltage	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.6.1.1	0.01 mA to 10 mA
		Separation of the telecommunication network from earthling	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.6.1.2	0.1 kV to 5 kV
		Impulse test	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl.6.2.2.1	0.1 kV to 7 kV 10/700 μS and 1.2/10 μS



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		Steady state test	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.6.2.2.2	0.1 kV to 5 kV
		Compliance criteria	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl. 6.2.2.3	0.01 kV to 8 kV
		Voltage Surge Test	IS 13252 (Part 1): 2010 IEC60950-1:2005, Cl. 7.4.2	0.5 kV to 10kV (1 nF)
		Impulse test	IS 13252 (Part 1): 2010 IEC60950-1: 2005, Cl.7.4.3	0.1 kV to 7 kV 10/700 $\mu$ S and 1.2/10 $\mu$ S
<b>VI.</b>	<b>AUDIO EQUIPMENT</b>			
<b>1.</b>	<b>Audio, Video and Electronic Apparatus</b>	Normal Operating conditions	Cl. 4.2 of IS 616: 2017/ IEC 60065: 2014	Upto 20A 0.01V to 600V 50Hz to 60Hz
		Fault Conditions	Cl. 4.3 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Verification of marking & instructions	Cl. 5 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Heating under normal operating conditions	Cl. 7 of IS 616: 2017/ IEC 60065: 2014	Ambient to 400 °C 0.00 1 mm to 1 mm
		Verification of constructional requirements with regard to protection against electric shock	Cl. 8 of IS 616: 2017/ IEC 60065: 2014	Upto 980 N Upto 150 mm Ambient to 50 °C 50% RH to 95 % RH
		Electric Shock hazard under normal operating condition	Cl. 9.1.1.1 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Determination of Hazardous live parts	Cl. 9.1.1.2 of IS 616: 2017/ IEC 60065: 2014	Upto 50 mA
		Determination of	Cl. 9.1.1.3 of IS 616: 2017/	Qualitative

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		Accessible parts	IEC 60065: 2014	
		Opening of the enclosure	Cl. 9.1.3 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Terminals	Cl. 9.1.4 of IS 616: 2017/ IEC 60065: 2014	0.1 mm to 150 mm
		Pre-set controls	Cl. 9.1.5 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Withdrawal of mains plug	Cl. 9.1.6 of IS 616: 2017/ IEC 60065: 2014	Upto 200MHz 1500V <sub>pk</sub>
		Resistance to external forces	Cl. 9.1.7 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Removal of protective covers	Cl. 9.2 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Insulation requirement	Cl. 10 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Surge test	Cl. 10.2 of IS 616: 2017/ IEC 60065: 2014	0.1 kV to 10 kV
		Humidity treatment	Cl. 10.3 of IS 616: 2017/ IEC 60065: 2014	Ambient to 50 °C 50% RH to 95 % RH
		Insulation resistance and dielectric strength	Cl. 10.4 of IS 616: 2017/ IEC 60065: 2014	1 MΩ to 9999 MΩ Upto 1.0 kV DC
		Fault Condition	Cl. 11 of IS 616: 2017/ IEC 60065: 2014	Ambient to 400°C
		Electric shock hazard	Cl. 11.1 of IS 616: 2017/ IEC 60065: 2014	Upto 50 mA
		Heating under fault conditions	Cl. 11.2 of IS 616: 2017/ IEC 60065: 2014	Ambient to 400°C
		Mechanical Strength	Cl. 12 of IS 616: 2017/ IEC 60065: 2014	Upto 980 N
		Bump Test	Cl. 12.1.2 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Vibration	Cl. 12.1.3 of IS 616: 2017/ IEC 60065: 2014	Armature Diameter:240 mm Rated Force:1500 Kgf SINE1500 Kgf rms

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				Random Frequency Range: DC to 3200Hz Maximum Acceleration 90 'g' bare Table Velocity: 1700mm/Sec Displacement: 38mm Pay Load Capacity: 250Kg
		Impact Test	Cl. 12.1.4 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Drop Test	Cl. 12.1.5 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Stress Relief Test	Cl. 12.1.6 of IS 616: 2017/ IEC 60065: 2014	Ambient to 250v
		Fixing of actuating elements	Cl. 12.2 of IS 616: 2017/ IEC 60065: 2014	Qualitative Upto 980 N , 10Kg
		Remote control devices held in hand	Cl. 12.3 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Drawers	Cl. 12.4 of IS 616: 2017/ IEC 60065: 2014	Upto 980 N
		Antenna coaxial sockets mounted on the apparatus (Endurance Test) (Impact Test) (Torque Test)	Cl. 12.5 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Telescoping or rod antennas	Cl. 12.6 of IS 616: 2017/ IEC 60065: 2014	10 cNm to 5 Nm Upto 980 N
		Apparatus containing COIN/Button Cell Batteries	Cl. 12.7.1/12.7.2 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Battery Replacement	Cl. 12.7.3.3 of IS 616: 2017/ IEC 60065: 2014	Qualitative

**Nand Kumar**  
Convenor

**Nitan Garg**  
Program Manager

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		Drop	Cl. 12.7.3.4 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Impact	Cl. 12.7.3.5 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Crush	Cl. 12.7.3.6 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Clearance and Creepage Distance	Cl. 13.0 of IS 616: 2017/ IEC 60065: 2014	Upto 150 mm
		Verification of Component	Cl. 14.0 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Provisions for protective earthing	Cl. 15.2 of IS 616: 2017/ IEC 60065: 2014	Upto 5 kV Upto 6 kV <sub>dc</sub> Upto 9999 MΩ
		Terminals for external flexible cord and for permanent connection to the mains supply	Cl. 15.3 of IS 616: 2017/ IEC 60065: 2014	10 cNm to 5 Nm Upto 980 N
		Devices forming parts of Mains Plug	Cl. 15.4 of IS 616: 2017/ IEC 60065: 2014	10 cNm to 5 Nm
		External Flexible cable	Cl. 16.0 of IS 616: 2017/ IEC 60065: 2014	Upto 150 mm Upto 980 N 10 cNm to 5 Nm
		Electric connection and Mechanical Fixing	Cl. 17.0 of IS 616: 2017/ IEC 60065: 2014	Upto 150 mm Upto 980 N 10 cNm to 5 Nm
		Stability	Cl. 19.1 to 19.4 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Mechanical Strength of glass	Cl. 19.6 of IS 616: 2017/ IEC 60065: 2014	Qualitative 0.01mm to 150 mm
		Wall or ceiling mounting means	Cl. 19.7 of IS 616: 2017/ IEC 60065: 2014	Qualitative
		Resistance to fire	Cl. 20.0/ Annex G of IS 616: 2017/ IEC 60065: 2014	Qualitative

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**MECHANICAL TESTING**

I.	TOYS AND SIMILAR PRODUCTS			
1.	<b>Expanding Materials, Small Parts, Projectile Toys with Stored Energy, Mouth Actuated Toy, Magnetic Toys</b>	Small Parts	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.2	Qualitative
	<b>Squeeze Toys, Rattles, Fasteners, Toys</b>	Shape and Size	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.3	Qualitative
	<b>Small Balls and Projectiles Toys</b>	Small Balls	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.4	Qualitative
	<b>Pompoms Toys</b>	Test for Pompoms	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.5	Qualitative
	<b>Pre-school Play Figures Toys</b>	Template test	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.6	Qualitative
	<b>Toys Having Edges, Points, Holes, Clearances and Accessibility of Mechanisms, Springs</b>	Accessibility of Part Or component	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.7	Qualitative
	<b>Toys with Edges, Metal Wires and Rods</b>	Sharp Edge	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.8	Qualitative

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	<b>Metal Wires and Rods</b>	Sharp Point	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.9	Qualitative
	<b>Plastic film and Sheeting</b>	Thickness	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.10	Upto 1mm
	<b>Toys with cords and elastics</b>	Cord Thickness Self-retraction of pull cords	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.11.1	1mm to10mm
	<b>Toys with Closures, chest Lid, Doors</b>	Test for Closures Test for Lid support Durability test for toy chest lids	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.13.1,Cl.5.13.2.1, Cl5.13.2.2	Qualitative
	<b>Toys with simulated protective equipment such as helmets, hats and goggles</b>	Impact test for toys That cover the face	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.14	Qualitative
	<b>Projectiles toys</b>	Kinetic energy test Wall Impact test	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.15.1,Cl.5.15.2	0.1 J to 50J
	<b>Toys with braking requirements, mechanically and electrically powered ride on toys other than toy bicycles</b>	Free-wheeling Facility and Brake performance	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.16.2,Cl.5.16.3	Qualitative
	<b>Electrically Driven ride-on toys</b>	Speed of electrically Driven ride-on toys	IS 9873(Part 1):2017 ISO:8124(Part 1):2014 Cl.5.17	Upto 5m 0.01s to 1hr
	<b>Toys containing a Heat source</b>	Temperature increase	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.18	21°C to 50°C

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	Liquid filled toys	Leakage	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.19	Qualitative
	Mouth-actuated toys	Durability	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.20	Qualitative
	Toys with Expanding materials	Dimensions Expanding Materials	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.21	0.01mm to 150mm
	Toy push chairs, perambulators toys	Test for Folding or Sliding Mechanisms Other toys with folding mechanisms	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.22.1, Cl.5.22.2, Cl.5.22.3	Qualitative
	Washable Toys	Weight increase	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.23	Upto 30 %
	Large and bulky toys, battery operated toys	Drop	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.24.2	Qualitative
	Large and Bulky toys	Tip-over	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl.5.24.3	Qualitative
	Toys with a projection	Torque	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.24.5	Qualitative
	Soft filled toys, beanbag-type toys, filled toys, pompoms, toys with projections, metal wires and rods and projectile toys	Tension	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.24.6, Cl. 5.24.6.2, Cl. 5.24.6.3, Cl. 5.24.6.4 Cl. 5.24.6.5	Qualitative
	Toys with accessible and	Compression Test	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014,	Qualitative

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	non- accessible flat surface		Cl. 5.24.7	
	Toys having metal wires and rods	Flexure Test	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.24.8.1,Cl. 5.24.8.2, Cl. 5.24.8.3	Qualitative
	Toys having acoustic requirements	Sound pressure level	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.25	20dB to140dB
	Toy scooters	Static Strength for toy scooters	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.26	Qualitative
		Dynamic Strength for toy scooters	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.27	Qualitative
		Brake Performance for toys scooters	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.28	Qualitative
		Strength of toy scooters steering tubes	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.29	Qualitative
	Toys with magnetic and magnetic components	Tension test for magnets	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.31.1,Cl. 5.31.2, Cl. 5.31.3	Qualitative
		Magnetic Flux Index	IS 9873(Part 1): 2017 ISO 8124(Part 1): 2014, Cl. 5.32.1	Upto 2000 mT
		Impact test for Magnets	IS 9873(Part 1):2017 ISO 8124(Part 1): 2014, Cl. 5.33	Qualitative
		Soaking test for Magnet	IS 9873(Part 1):2017 ISO 8124(Part 1): 2014, Cl. 5.34	Qualitative



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**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-6346

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**Validity** 27.09.2017 to 26.09.2019

**Last Amended on** 29.04.2019

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	<b>Suction Cup Projectiles</b>	Length of Suction cup projectiles	IS 9873(Part 1):2017 ISO 8124(Part 1): 2014, Cl. 5.37	0.01mm to 150mm
2.	<b>Toys</b>	Flammability	IS 9873 (Part 2): 2017 ISO 8124(Part 2): 2014, Cl.5.3,Cl.5.4,Cl.5.5	Qualitative
3.	<b>Activity Toys</b>	Maximum Height	IS 9873(Part 4): 2017 ISO 8124(Part 4): 2014, Cl.4.1.2	1mm to 5m
		Corners and edges	IS 9873(Part 4): 2017 ISO 8124(Part 4): 2014, Cl.4.1.3	0.01mm to 150mm
		Climbing and swinging ropes, chains and cables	IS 9873(Part 4): 2017 ISO 8124(Part 4): 2014, Cl.4.1.5	0.01mm to 150mm
		Rungs ladders, stepladders and stairways	IS 9873(Part 4): 2017 ISO 8124(Part 4): 2014, Cl.4.3	1mm to 5m
		Stability	IS 9873(Part 4): 2017 ISO 8124(Part 4): 2014, Cl. 6.1.1,Cl.6.1.2,Cl.6.1.3, Cl.6.1.4,Cl.6.1.5	Qualitative
		<b>Swings Toys</b>	Static strength	IS 9873(Part 4): 2017 ISO 8124(Part 4): 2014, Cl. 6.2,Cl. 6.2.1,Cl. 6.2.2, Cl. 6.2.2.3.1,Cl. 6.2.2.3.2
	<b>Inflatable Activity Toys</b>	Deflation of Inflatable Activity toys	IS 9873(Part 4): 2017 ISO 8124(Part 4): 2014, Cl.6.9	Qualitative
	<b>Paddling Pools Toy</b>	Static load	IS 9873(Part 4): 2017 ISO 8124(Part 4): 2014, Cl.6.10	Qualitative