

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 1 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

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

I.	DOMESTIC ELECTRICAL APPLIANCES			
		Marking & Instructions	IS 302-1:2008, Clause7 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011, & IS 3017:1985	Qualitative Visual Examination
		Protection against access to live parts	IS 302-1:2008, Clause8 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative Standard test finger 0.1 to 75V
		Power Input and Current	IS 302-1:2008, Clause10 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 IS 3017:1985	1 to 6000 W/1W 0.01 to 30 A/0.01A 1 to 300 V/1V
		Temperature rise/ Heating	IS 302-1:2008, Clause11 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002,	Ambient-400°C /0.1°C

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 2 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			IS 302-2-35:2011 & IS 3017:1985	
		Leakage current and electric strength at operating temp.	IS 302-1:2008, Clause13 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	0.01-5mA up to 5kV/0.1kV Temp. 27 ± 2°C
		Moisture resistance & Leakage current and electric strength	IS 302-1:2008, Clause15 & 16 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative (IPX1,IPX2,IPX3,IPX4, IPX5,IPX6,IPX7) Temp:-20 to +60°C/0.1°C RH:0 to 99.9% LC-1% 0.01 to 5 kV/0.01 V Upto 200mA/1mA 1-500 µA/LC-1 µA
		Overload protection of Transformers and associated circuits/ Overload protection	IS 302-1:2008, Clause17 IS 302-2-21,IS 302-2-35, IS 302-2-201,IS 302-2-30, & IS 3017:1985	Qualitative
		Endurance	IS 302-1:2008, Clause18 IS 4159:2002 & IS 3017:1995	Qualitative
		Abnormal operation	IS 302-1:2008, Clause19	Ambient to 400°C/

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 3 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

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			IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	LC-1°C
		Stability and mechanical hazards	IS 302-1:2008, Clause20 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative 0 to 10°, 0 to 15° Standard Test finger
		Mechanical strength	IS 302-1:2008, Clause21 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative 2N to 200N
		Construction	IS 302-1:2008, Clause22 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative Visual Examination
		Internal wiring	IS 302-1:2008, Clause 23	Qualitative

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 4 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Visual Examination
		Components	IS 302-1:2008, Clause 24 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative Visual Examination
		Supply connection & external flexible cables & cords/Supply connection & external flexible cords	IS 302-1:2008, Clause 25 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative Pull 30 to 100 N/1N Torque 0.02 to 10 Nm/0.01Nm
		Terminals for external conductors	IS 302-1:2008, Clause 26 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative
		Provision for Earthing	IS 302-1:2008, Clause 27	1to 50A/0.01A

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 5 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	0.01-4.99/0.01 Volt
		Screws and connections	IS 302-1:2008, Clause 28 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Qualitative Torque 0.02 to 10 Nm/0.01Nm
		Creepage distance & clearances/	IS 302-1:2008, Clause 29 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Digimatic caliper 0-150mm/0.01mm Filler gauge 0.03mm to 0.5 mm
		Resistance to heat, fire	IS 302-1:2008, Clause 30 IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	Ball pressure Force:20N, Dia:0.01-10 mm Temp:50°C to 180°C/0.1°C Glow wire Temperature:550°C to 960°C/1°C Needle Flame:0 to 700°C/0.1°C Flame extinguishing time:1-999 sec/1 sec
		Resistance to rusting	IS 302-1:2008, Clause 31	Qualitative

Vivek Verdhan
Convenor

Alok Jain
Program Manager

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Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 6 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

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			IS 302-2-3:2007, IS 302-2-201:2008, IS 302-2-30:2007, IS 302-2-21-2011, IS 4159:2002, IS 302-2-35:2011 & IS 3017:1985	10 to 98 % RH/ LC-1%RH
2.	Electric Iron	Measurement of Heating up time	IS 366-1991, Clause 10	0.01 s to 24 hr/0.01s Ambient to 600°C/0.1°C
		Measurement of Sole plate temperature	IS 366-1991, Clause 11	Ambient to 600°C/LC-0.1°C
		Measurement of Temp. Distribution	IS 366-1991, Clause12	Ambient to 600°C/LC-0.1°C
		Measurement of Initial Over swing Temp and Heating up excess temperature	IS 366-1991, Clause13	Qualitative Ambient to 600°C/LC-0.1°C
		Measurement of Cyclic Fluctuation of Temperature	IS 366-1991, Clause14	Qualitative Ambient to 600°C/LC-0.1°C 10 to 300 V/LC-1V
		Measurement of Thermostatic Stability	IS 366-1991, Clause16	Qualitative Ambient to 600°C/LC-0.1°C 0 to 5000 W/1W
3.	Electric immersion water heater	Operation under overload condition of appliance with Heating Element	IS 368:2014, Clause 12	Qualitative 1 to 6000 W/1W 0.01 to 30 A/0.01A 1 to 300 V/1V
		Endurance	IS 368:2014, Clause18	Qualitative 1 to 6000 W/1W 0.01 to 30 A/0.01A 1 to 300 V/1V
4.	Electric Radiator	Temp. rise of surface on	IS 369:1992, Clause11	Qualitative

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 7 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		which the appliance is placed or supported		Ambient to 600°C/0.1°C
		Endurance	IS 369:1992, Clause12	Qualitative
		Finish	IS 369:1992, Clause13	Qualitative Temp:20-30°C/0.1°C RH: 10 to 98%/ LC-1%
		Verification of Rated Capacity	IS 2082:1993, Clause15 (RA 2009)	Qualitative
		Standing Loss per 24Hrs.	IS 2082:1993, Clause16	1 sec-9999 hrs/1sec Ambient to 600°C/LC-0.1°C
		Hot Water Output	IS 2082:1993, Clause17	Ambient to 600°C/LC-0.1°C 1-15 LPM
		Reheating Time	IS 2082:1993, Clause18	Qualitative 1second-24 hrs/1sec Ambient to 600°C/LC-0.1°C
		Mixing Factor	IS 2082:1993, Clause19	Qualitative Ambient to 600°C/LC-0.1°C
		Deviation from Dial Calibration	IS 2082:1993, Clause20	Qualitative Ambient to 600°C/LC-0.1°C
		Cyclic Temperature Variation	IS 2082:1993, Clause21	Qualitative Ambient to 600°C/LC-0.1°C
		Finish	IS 2082:1993, Clause22	Qualitative
		Endurance	IS 2082:1993, Clause23	Qualitative
		Finish	IS 8978:1992, Clause10	Qualitative
		Operation of flow switch	IS 8978:1992, Clause11	Qualitative 1-10 ⁶ counts
		Endurance	IS 8978:1992, Cl.12	Qualitative
		Finish	IS 3017:1985, Clause33	Qualitative

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 8 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
	use with water heater	Dimensions	IS 3017:1985, Clause101	Qualitative 0.01-300mm
		Operation under overload condition	IS 3017:1985, Clause102	Qualitative 1-270V, 30A
		Rating	IS 302-1:2008 & IS 4250:1980 Clause 5	Qualitative
		Classification	IS 302-1:2008 Clause 6 IS 4250:1980	Qualitative
		Marking	IS 302-1:2008 & IS 4250:1980 Clause 7	Qualitative
		Protection against electric shock	IS 302-1:2008 Clause 8 IS 4250:1980	0 to 99.99V/0.1V 2.5 N to 300 N
		Starting	IS 4250:1980 Clause 9	0 to 300V/1V 0.1 A to 20 A AC 0.1
		Input	IS 302-1:2008 & IS 4250:1980 Clause 10	0 V to 300 V 0.1A to 20 A 0 W to 5.0 KW
		Temperature Rise	IS 302-1:2008 & IS 4250:1980 Clause 11	Qualitative 0.1°C to 400°C
		Electrical Insulation And Leakage Current At Operating Temperature	IS 302-1:2008 & IS 4250:1980 Clause 13	0 to 500uA/1uA 0V to 300V/1V 0.01 kV to 5 kV~ 1 mA to200 mA
		Moisture Resistance	IS 302-1:2008 Clause 15 IS 4250:1980	Qualitative (-)20°C to 60°C/0.1°C 0.1 % to 99.9 %RH
		Insulation Resistance		500 V/LC Variable

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Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 9 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		And Electric Strength	IS 4250:1980	2 to 100 MΩ Leakage Current: 0 to 500uA/1uA 0 to 300 V/1V Qualitative 0.01 kV to 5 kV~ Trip Current: 0.1 mA to 100mA
		Endurance	IS 4250: 1980 Clause 18	Qualitative Voltage: 0.01 kV to 5 kV~ Trip Current: 1 mA to 200 mA
		Abnormal Operation	IS 302-1:2008 & IS 4250:1980 Clause 19	Qualitative Voltage: 0.01 kV to 5 kV~ Trip Current: 1 mA to 200 mA
		Stability and mechanical Hazards	IS 302-1:2008 & IS 4250:1980 Clause 20	Qualitative 2.5 N to 10 N Up to 15°
		Mechanical Strength	IS 302-1:2008 Clause 21 IS 4250:1980	Qualitative Up to 0.5 J 2.5 N to 10N 0.01 kV to 5 kV~ 1 mA to 200 mA
		Construction	IS 302-1:2008 & IS 4250:1980 Clause 22	Qualitative 0.001 mm to 25 mm 0.01 mm to 150 mm 0.1°C to 200°C 0-24 hrs/0.01/1 sec 2.5 N to 100 N 0.01 kV to 5 kV~ 1 mA to 200 mA Ambient to 200°C
		Internal Wiring	IS 302-1:2008 Clause 23	0.001mm to 25mm

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Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 10 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

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			IS 4250:1980	0.01 kV to 5 kV~ 1 mA to 200 mA Qualitative
		Components	IS 302-1:2008 Clause 24 IS 4250:1980	Qualitative
		Supply Connections and External Flexible Cables and Cords	IS 302-1:2008 & IS 4250:1980 Clause 25	Qualitative 0.01 kV to 5 kV~ 1 mA to 200 mA 0.001 mm to 25 mm 0.01 mm to 150 mm 0.2 Nm to 1.2 Nm 2.5 N to 50 N
		Terminal For External Conductors	IS 302-1:2008 Clause 26 IS 4250:1980	Qualitative 0.001mm to 25mm 0.01 mm to 150 mm
		Provision For Earthing	IS 302-1:2008 Clause 27 IS 4250:1980	Current: 0 to 50 A/0.1V Voltage: 0 to 99.9/0.01V 1 mΩ to 500 mΩ 0-24 hrs/0.01/1 sec
		Screws and Connections	IS 302-1:2008 Clause 28	Qualitative 0.01 mm to 150mm 1 Nm to 5 Nm 0.001 mm to 25 mm
		Creepage Distances, Clearances And Distances Through Insulation	IS 302-1:2008 Clause 29 IS 4250:1980	0.001 mm to 25 mm 0.01 mm to 150 mm
		Resistance To Heat, Fire	Clause 30 of IS 302-1:2008	Ambient to 200°C, 0.01

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 Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh
Accreditation Standard ISO/IEC 17025: 2005
Certificate Number TC-6104 **Page 11 of 35**
Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

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		And Tracking	& IS 4250:1980	mm to 150 mm, Glow Wire Temp: 0 to 1200°C/1°C, Burner Dia:9.5 mm Needle Dia:0.5 mm, Time:1msec to 30 min
		Resistance To Rusting	IS 302-1:2008 Clause 31 IS 4250:1980	Qualitative Temperature: Ambient to 200°C Temperature: (-)20°C to 60°C Relative Humidity: 0.1 to 99.9 % RH
		Finish	IS 4250:1980 Clause 33	Qualitative
		Operational Tests	IS 4250:1980 Clause 34	Qualitative 0-24 hrs/0.01/1 sec
		Temperature Withstand Test For Bowl	IS 4250:1980 Cl.35	Qualitative
		Test for Controls	IS 4250:1980 Clause 36	Qualitative
		Strength Of Assembly	IS 4250:1980 Clause 37	Qualitative 2.5 N to 50N
II.	CABLES AND ASSESSORIES			
1.	PVC Insulated Cable up to 1100 volts	Wrapping Test for Aluminium Conductor	IS 694:2010 IS 8130-2013 IS 10810(Part-3)-1984	Qualitative
		Persulphate test	IS 694:2010 IS 8130-2013 IS 10810(Part-4)-1984	0.0001gm- 200 gm/0.0001gm
		Thickness of Insulation Sheath & Diameter	IS 694:2010 IS 10810(Part-6)-1984	0.001 to 25 mm/0.001mm 0.01 to 10mm/0.01 1 to 50 mm/1 mm 0.01 to 150mm/0.01
		Loss of mass test of	IS 694:2010	Ambient to 200°C/0.1°C

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 12 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Insulation & Sheath	IS 5831-1984 IS 10810(Part-10)-1984	0.1-200gm/0.1mg
		Ageing in air oven of Insulation & Sheath	IS 694:2010 IS 5831-1984 IS 10810(Part-11)-1984	Ambient to 200°C/0.1°C 0.1-2500N/0.1N 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Shrinkage test of Insulation & Sheath	IS 694:2010 IS 5831-1984 IS 10810(Part-12)-1984	Ambient to 200°C/0.1°C 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Heat shock test of Insulation & Sheath	IS 694:2010 IS 5831-1984 IS 10810(Part-14)-1984	Ambient to 200°C/0.1°C 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Hot deformation test of Insulation & Sheath	IS 694:2010 IS 5831-1984 IS 10810-15:1984	Ambient to 200°C/0.1°C 0.5-1000mm/0.5/1mm
		Insulation resistance constant	IS 694:2010 IS 5831-1984 IS 10810(Part-43)-1984	1-100X10 ⁶ MΩ 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Volume Resistivity	IS 694:2010 IS 5831-1984 IS 10810(Part-43)-1984	1-100X10 ⁶ MΩ 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		High Voltage test	IS 694:2010 IS 5831-1984 IS 10810(Part-45)-1984	T0.01 to 5 kV/0.01kV 1mm-15 Meter/1mm
		AC High Voltage test (Water immersion)	IS 694:2010 IS 10810(Part-45)-1984	0.2 to 10 kV/0.2kV 1mm-15 Meter/1mm
		DC High Voltage test (Water immersion)	IS 694:2010 IS 10810(Part-45)-1984	T0.01 to 3 kV/0.01kV 1mm-15 Meter/1mm
		Flammability test	IS 694:2010 IS 10810(Part-53)-1984	1 to 600 mm/1mm 0.1 sec to 99.9 sec/ 0.1 sec 0.1mg to200 gm/0.1 mg 0.5-1000mm/0.5/1mm
		Cold Bend test	IS 694:2010	(-20 to 50)°C/0.1 °C

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 13 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		(Up to 12.5 mm dia)	IS 10810(Part-20)-1984	0.5-1000mm/0.5/1mm
		Cold Impact test (Above to 12.5 mm dia)	IS 694:2010 IS 10810 (Part-21)-1984	(-20 to 50)°C/0.1 °C 0.5-1000mm/0.5/1mm 0-1Kg
		Additional ageing tests	IS 694:2010 Clause 6.	Qualitative
		Conductor Resistance	IS 694:2010 IS 8130-2013 IS 10810(Part-5)-1984	0.2 μΩ to 11 Ohm/0.2 μΩ 1mm-15 Meter/1mm
		Annealing tests for Copper Conductor	IS 694:2010 IS 8130-2013 IS 10810(Part-1)-1984	0.5-1000mm/0.5/1mm 0-10KN/0.001KN 0.01 to 25 mm/0.001 1mm-15 Meter/1mm
		Tensile Strength for Aluminium Conductor	IS 694:2010 IS 8130-2013 IS 10810(Part-2)-1984	0.5-1000mm/0.5/1mm 0-10KN/0.001KN 0.01 to 25 mm/0.001 1mm-15 Meter/1mm
		Tensile strength & Elongation at break of insulation & sheath	IS 694:2010 IS 5831-1984 IS 10810(Part-7)-1984	0.1N to 2500N/0.1N 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Copper Purity	IS 191:2007	0.0001gm- 200 gm/0.0001gm
		Thermal stability	IS 694:2010 IS 10810(Part-60)-1988	1 sec to 24Hr/1sec Ambient to 250 °C/0.1° C 0.1-200gm/0.1mg
		Thermal stability	IS 1554(P-1)-1988 IS 10810(Part-60)-1988	1 sec to 24Hr/1sec Ambient to 250 °C/0.1° C 0.1-200gm/0.1mg
		Wrapping Test for Aluminum Conductor	IS 1554(P-1)-1988(RA 2015) IS 8130-2013 IS 10810(Part-3)-1984	Qualitative
		Thickness of Insulation &	IS 1554(P-1)-1988	0.001 to 25

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 14 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Sheath	IS 8130-2013 IS 10810(Part-6)-1984	mm/0.001mm 0.01 to 10mm/0.01 1 to 50 mm/1 mm 0.01 to 150mm/0.01
		Tensile Strength for Aluminium Conductor	IS 1554(P-1)-1988 IS 8130-2013 IS 10810(Part-2)-1984	2N to 50 KN/2N 0.5-1000mm/0.5/1mm 0.001 to 25mm/0.001
		Tensile strength & Elongation at break of insulation & sheath	IS 1554(P-1)-1988 IS 5831-1984 IS 10810(Part-7)-1984	0.1N to 2500N/0.1N 1-15 meter/1mm 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Loss of mass test of Insulation and Sheath	IS 1554(P-1)-1988 IS 5831-1984 IS 10810(Part-10)-1984	Ambient to 200°C/0.1°C 0.1mg to 200gm/0.1mg 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Ageing in air oven of Insulation & Sheath	IS 1554(P-1)-1988 IS 5831-1984 IS 10810(Part-11)-1984	Ambient to 200°C/0.1°C 0.1mg to 200gm/0.1mg 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Shrinkage test of Insulation & Sheath	IS 1554(P-1)-1988 IS 5831-1984 IS 10810(Part-12)-1984	Ambient to 200°C/0.1°C 0.01to 150mm/0.01 0.5-1000mm/0.5/1mm
		Heat shock test of Insulation and Sheath	IS 1554(Part-1)-1988 IS 5831-1984 IS 10810 (Part-14)-1984	Ambient to 200°C/0.1°C 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Hot deformation test of Insulation and Sheath	IS 1554(Part-1)-1988 IS 5831-1984 IS 10810 (Part-15)-1984	Ambient to 200°C/0.1°C 0.5-1000mm/0.5/1mm
		Volume Resistivity	IS 1554(Part-1)-1988 IS 5831-1984 IS 10810(Part-43)-1984	1-100X10 ⁶ MΩ 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Insulation resistance constant	IS 1554(Part-1)-1988 IS 5831-1984 IS 10810 (Part-43)-1984	1-100X10 ⁶ MΩ 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		High Voltage test	IS 1554(Part-1)-1988	0.1 to 5 kV/0.1kV

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 15 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			IS 10810(Part-45)-1984	1mm-15 Meter/1mm
		AC High Voltage test (Water immersion)	IS 1554(Part-1)-1988 IS 10810(Part-45)-1984	0.2 to 10 kV/0.2kV 1mm-15 Meter/1mm
		DC High Voltage test (Water immersion)	IS 1554(Part-1)-1988 IS 10810(Part-45)-1984	0.01 to 3 kV/0.01kV 1mm-15 Meter/1mm
		Flammability test	IS 1554(Part-1)-1988 IS 5831-1984 IS 10810(Part-53)-1984	1 to 600 mm/1mm 0.1 sec to 99.9 sec /0.1 sec 0.1mg to200 gm/0.1 mg 0.5-1000mm/0.5/1mm
		Cold Bend test (Up to 12.5 mm Dia.)	IS 1554(Part-1)-1988 IS 5831-1984 IS 10810(Part-20)-1984	(-20 to 50)°C/0.1 °C 0.5-1000mm/0.5/1mm
		Cold Impact test (Above to 12.5 mm dia)	IS 1554(Part-1)-1988 IS 5831-1984 IS 10810(Part-21)-1984	(-20 to 50)°C/0.1 °C 0.5-1000mm/0.5/1mm
		Bleeding & Blooming	IS 1554(Part-1)-1988 IS 5831-1984 IS 10810(Part-19)-1984	Qualitative
		Conductor Resistance	IS 1554(Part-1)-1988 IS 8130-2013 IS 10810(Part-5)-1984	0.1 µOhms to 11 Ohm/0.2 µOhms 1mm-15 Meter/1mm
		Annealing tests for Copper Conductor	IS 1554(Part-1)-1988 IS 8130-2013 IS 10810(Part-1)-1984	0.5-1000mm/0.5/1mm 0-10KN/0.001KN 0.01 to 25 mm/0.001 1mm-15 Meter/1mm
3.	Armouring wires and strips	Dimension for armouring material	IS 1554(Part-1)-1988 IS 7098(Part-1)-1988 IS 3975-1999 IS 10810(Part-36)-1984	Digimatic caliper 0.01-150 mm/ 0.01mm Needle pointed micrometer 0.01-25 mm/0.01mm
		Tensile strength &	IS 1554(Part-1)-1988	1N to 10KN/1N

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 16 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Elongation at break	IS 7098(Part-1)-1988 IS 3975-1999 IS 10810(Part-37)-1984	1mm-15 Meter/1mm 0.5-1000mm/0.5/1mm
		Torsion test on Galvanized steel wire for armouring	IS 1554(Part-1)-1988 IS 7098(Part-1)-1988 IS 3975-1999 IS 10810(Part-38)-1984	1 to 200 count/1 count
		Winding test on Galvanized steel strips for armouring	IS 1554(Part-1)-1988 IS 7098(Part-1)-1988 IS 3975-1999 IS 10810(Part-39)-1984	Qualitative
		Resistivity & Conductance test of Armour (Wires/strips)	IS 1554(Part-1)-1988 IS 7098(Part-1)-1988 IS 3975-1999 IS 10810(Part-42)-1984	0.2 $\mu\Omega$ to 11 Ω /0.2 μOhms 0.5-1000mm/0.5/1mm 1mm-15 Meter/1mm 1 to 50°C/1 °C
		Uniformity of Zinc coating	IS 1554(P-1)-1988 IS 7098(P-1)-1988 IS 3975-1999 IS 10810(Part-40)-1984	Qualitative
		Mass of Zinc Coating	IS 1554(Part-1)-1988 IS 7098(Part-1)-1988 IS 3975-1999 IS 10810(Part-41)-1984	0-200 gm/0.1mg 0-1000mm/0.5/1mm
		Thermal stability	IS 7098(Part-1)-1988 IS 10810(Part-60)-1988	1sec to 24Hr/1sec ambient to 250 °C/0.5°C
		Wrapping Test for Aluminum Conductor	IS 7098(Part-1)-1988 IS 8130-2013 IS 10810-3:1984,	Qualitative
		Thickness of Insulation & Sheath	IS 7098(Part-1)-1988 IS 10810(Part-6)-1984	0.001 to 25 mm/0.001mm 0.01 to 10mm/0.01 1 to 50 mm/1 mm 0.01 to 150mm/0.01
		Tensile strength for	IS 7098(Part-1)-1988	1 to 10 kN/1N

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 17 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Aluminium Conductor	IS 8130-2013 IS 10810(Part-2)-1984	0.01 to 150mm/0.01 1 to 15mm/1mm
		Tensile strength & Elongation at break of insulation & sheath	IS 7098(Part-1)-1988 IS 5831-1984 IS 10810(Part-7)-1984	0.1N to 2500N/0.1N 1-15 meter/1mm 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Hot set test XLPE Insulation only	IS 7098(Part-1)-1988 IS 10810-30:1984	1-15 meter/1mm 0.01 to 150mm/0.01 0.1 to 250°C/0.1 °C
		Wrapping Test for Aluminium Conductor	IS 7098(Part-1)-1988 IS 8130-1984 IS 10810(Part-3)-1984	Qualitative
		Loss of mass test of Sheath	IS 7098(Part-1)-1988 IS 5831-1984 IS 10810(Part-10)-1984	0.1mgto200gm/0.1mg 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Ageing in air oven of Insulation & Sheath	IS 7098(Part-1)-1988 IS 5831-1984 IS 10810(Part-11)-1984	Ambient to 200°C/0.1°C 0.1-2500N/0.1N 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Shrinkage test of Insulation & Sheath	IS 7098(Part-1)-1988, IS 5831-1984 IS 10810(Part-12)-1984	Ambient to 200°C/0.1°C 0.01to 150mm/0.01 0.5-1000mm/0.5/1mm
		Heat shock test of Sheath	IS 7098(Part-1)-1988 , IS 5831-1984 IS 10810(Part-14)-1984	Ambient to 200°C/0.1°C 0.01to150mm/0.01 0.5-1000mm/0.5/1mm
		Water absorption (gravimetric)	IS 7098(Part-1)-1988, IS 10810(Part-33)-1984	0.1mg to 200 gm/0.1mg 0.1 to 100°C/0.1 °C
		Hot deformation test of Sheath	IS 7098(Part-1)-1988, IS 5831-1984 IS 10810 (Part-15)-1984	Ambient to 200°C/0.1°C 0.5-1000mm/0.5/1mm 0.01to 150mm/0.01
		Volume Resistivity	IS 7098(Part-1)-1988 IS 10810(Part-43)-1984	1-100X10 ⁶ MΩ 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		High Voltage test	IS 7098(Part-1)-1988,	0.1to 10kV/0.1kV

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 18 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			IS 10810(Part-45)-1984	1mm-15 Meter/1mm
		Flammability test of Insulation & Sheath	IS 7098(Part-1)-1988 IS 10810(Part-53)-1984	1 to 600 mm/1mm 0.1 sec to 99.9 sec/ 0.1 sec 0.1mg to200 gm/0.1 mg 0.5-1000mm/0.5/1mm
		Cold Bend test (Up to 12.5 mm dia)	IS 7098(Part-1)-1988 IS 10810(Part-20)-1984	(-20 to 50)°C/0.1 °C 0.5-1000mm/0.5/1mm
		Cold Impact test (Above to 12.5 mm dia)	IS 7098(Part-1)-1988, IS 10810(Part-21)-1984	Qualitative
		Annealing tests for Copper Conductor	IS 7098(Part-1)-1988 IS 8130-2013 IS 10810(Part-1)-1984	0.5-1000mm/0.5/1mm 0-10KN/0.001KN 0.01 to 25 mm/0.001 1mm-15 Meter/1mm
5.	XLPE Insulated AB Cables up to 1100 volts	Wrapping Test for Aluminium Conductor	IS 14255-1995 IS 8130-2013 IS 10810(Part-3)-1984,	Qualitative
		Thickness of Insulation	IS 14255-1995 IS 10810(Part-6)-1984	0.01-150 mm/0.01mm 0.001-25 mm/0.001mm
		Tensile strength for Aluminium Conductor	IS 14255-1995 IS 8130-2013 IS 10810(Part-2)-1984	1to 10 kN/1N 0.01-150 mm/0.01mm 1mm-15 Meter/1mm
		Breaking load tests of messenger conductor	IS 14255-1995 IS 10810(Part-2)-1984	2N to 50 kN/2N 1mm-15 Meter/1mm
		Elongation test of messenger conductor	IS 14255-1995 Clause-11.3	2N to 50 kN/2N 1mm-15 Meter/1mm
		Conductor resistance tests of messenger conductor	IS 14255-1995 IS 10810(Part-5)-1984	0.2μΩ to 11 Ω/0.2 μΩ 1mm-15 Meter/1mm
		Tensile strength & Elongation at break of insulation	IS 14255-1995 IS 10810(Part-7)-1984	0.1N to 2500N/0.1N 1-15 meter/1mm 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Hot set test XLPE	IS 14255-1995	1-15 meter/1mm

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 19 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Insulation	IS 10810(Part-30)-1984	0.01 to 150mm/0.01 0.1 to 250°C/0.1 °C
		Ageing in air oven of Insulation	IS 14255-1995 IS 10810(Part-11)-1984	Ambient to 200°C/0.1°C 0.1-2500N/0.1N 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Shrinkage test of Insulation	IS 14255-1995, IS 10810(Part-12)-1984	Ambient to 200°C/0.1°C 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Water absorption (gravimetric)	IS 14255-1995 IS 10810(Part-33)-1984	0.1mg to 200 gm/0.1mg 0.1 to 100°C/0.1 °C
		Volume Resistivity	IS 14255-1995 IS 10810(Part-43)-1984	1-100X10 ⁶ MΩ 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Test on complete cable Bending test	Clause-11.4 of IS 14255-1995	Qualitative
		High Voltage test	IS 14255-1995 (RA 2010) IS 10810(Part-45)-1984	0.2to 10 kV/0.2kV 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Conductor resistance	IS 14255-1995 IS 8130-2013 IS 10810(Part-5)-1984	0.2μΩ to 11 Ω/0.2 μΩ 1mm-15 Meter/1mm 0.01 to 150mm/0.01
		Classification	IS 9537(Part-3)-1983 Clause-5	Qualitative
		Marking	IS 9537(Part-3)-1983 Clause-6	Qualitative
		Dimensions in conduit	IS 9537(Part-3)-1983 Clause-7	Qualitative
		Construction	IS 9537(Part-3)-1983 Clause-8	Qualitative
		Mechanical properties	IS 9537(Part-3)-1983 Clause-9	Qualitative
		Bending Test	IS 9537(Part-3)-1983 Clause-9.2	Qualitative
		Compression Test	IS 9537(Part-3)-1983	Qualitative

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 20 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			Clause-9.3	
		Impact Test	IS 9537(Part-3)-1983 (Clause-9.4	Qualitative
		Collapse Test	IS 9537(Part-3)-1983 Clause-9.5	Qualitative
		Resistance to Heat Test	IS 9537(Part-3)-1983 Clause-10	0.01 to 10 mm/0.01mm
		Resistance to burning	IS 9537(Part-3)-1983 Clause-11	0.1 to 60sec/0.1sec
		Electrical Strength	IS 9537(Part-3)-1983 Clause-12.1.1 of IS 9537 (Part-1)-1980	0.1to 10 kV/0.1kV 1mm-15 Meter/1mm
		Insulation Resistance in conduit	IS 9537(Part-3)-1983 Clause-12.1.2 of IS 9537 (Part-1)-1980	1-100X10 ⁶ MΩ 1mm-15 Meter/1mm 0.01 to 150mm/0.01
7.	FRLSH (Fire retardant Low Smoke, Zero Halogen test)	Oxygen Index test	IS 694-2010 IS 1554(Part-1)-1988 IS 7098(Part-1)-1988 IS 10810(Part-58)-1998	10 to 98%
		Temperature Index	IS 694-2010 IS 1554(Part-1)-1988 IS 7098(Part-1)-1988 IS 10810(Part-64)-2003 ASTM D-2863	Ambient to 500 °c
		Flame Retardance test on Single Cable	IS 1554(Part-1)-1988 IS 7098(Part-1)-1988 IS 10810(Part-61)-1988	1 to 600mm/1mm
		Halogen Acid Gas Evolution	IS 694-2010 IS 1554(Part -1)-1988 IS 7098(Part -1)-1988 IS 10810(Part-59)-1988	0.0001 to 200 gm/0.0001gm
		Smoke Density	IS 694-2010 IS 13360 (Part -6/Sec-9)-2001	1% to 100%/1% observation
		Flame Retardance test	IS 1554(Part -1)-1988	1 mm to 5 Meter/1mm

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 21 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		on Bunched Cable	IS 7098(Part -1)-1988 IS 10810(Part-62)-1984	
		Measurement of diameter of individual aluminum wire	IS 398(Part-1):1996 Clause:12.2	0.001 to 25 mm/0.001mm
		Breaking Load	IS 398(Part-1):1996 Clause:12.3	2N to 50 kN/2N 1mm to 5mtrs/1mm
		Wrapping Test	IS 398(Part-1):1996 Clause:12.4	Qualitative
		Resistance Test	IS 398(Part-1):1996 Clause:12.5	0.2 $\mu\Omega$ to 11 Ω /0.2 $\mu\Omega$ 1mm-15mtrs/1mm
		Lay Ratio	IS 398(Part-1):1996 Clause:12.6	0-300mm/ 0.5mm/1mm 0-1000mm/0.5mm/1mm
9.	Aluminium strand conductor, Galvanized steel reinforced	Measurement of diameter of individual aluminum and galvanized steel wire	IS 398(Part-2):1996 Clause:13.2	0.001 to 25mm/0.001mm
		Breaking Load aluminum and galvanized steel wire	IS 398(Part-2):1996 Clause:13.3	2N to 50 kN/2N 1mm to 15 mtrs/1mm
		Ductility Test (elongation %)	IS 398(Part-2):1996 Clause:13.4	1 -1000mm/1mm
		Torsion Test	IS 398(Part-2):1996 Clause:13.4.1	Qualitative
		Elongation	IS 398(Part-2):1996 Clause:13.4.2(RA 2012)	Upto 1000mm/1mm
		Wrapping Test	IS 398(Part-2):1996 Clause:13.5	Qualitative
		Resistance Test	IS 398(Part-2):1996 Clause:13.6	0.2 $\mu\Omega$ to 11 Ohm/0.2 $\mu\Omega$ 1mm-15mtrs/1mm 1 to 150mm/0.01mm
		Galvanizing test	IS 398(Part-2):1996 Clause:13.7	0-200 gm/0.1mg
10.	Aluminium alloy	Breaking Load	IS 398(Part-4):1994	2N to 50 kN/2N

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
 Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh
Accreditation Standard ISO/IEC 17025: 2005
Certificate Number TC-6104 **Page 22 of 35**
Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
	strand conductor		Clause:12.2	1mm-15mtrs/1mm
		Elongation	IS 398(Part-4):1994 Clause:12.3	1-1000mm/1mm
		Resistance Test	IS 398(Part-4):1994 Clause:12.4	0.2 $\mu\Omega$ to 11 Ω /0.2 $\mu\Omega$ 1mm-15mtrs/1mm
		Calculated Breaking Load of Conductor	IS 398(Part-4):1994 Annex B,	2N to-50 kN/2N 1mm-15mtrs/1mm
		Visual Examination	IS 3419-1989 Clause:8	Qualitative
		Checking of dimensions	IS 3419-1989 Clause:9	0.01 to 150 mm/0.01mm
		Resistance to heat	IS 3419-1989 Clause:10	0.01 to 10mm/0.01mm
		Resistance to burning	IS 3419-1989 Clause:11	0.1 to 60sec/0.1sec
		Moisture absorption test	IS 3419-1989 Clause:12	0.1mg to 200gm/0.1mg
		Test for resistance to chemical action	IS 3419-1989 Clause:13	Qualitative
		Copper test	IS 3419-1989 Clause:14	Qualitative
		Test for resistance to oil	IS 3419-1989 Clause:15	Qualitative
		Resistance to impact	IS 3419-1989 Clause:16	Qualitative
		Electrical strength & Insulation resistance	IS 3419-1989 Clause:17	1N to 10 kV/1N 1-100X10 ⁶ Ω 1mm-15 Meter/1mm 0.01 to 150mm/0.01
12.	U V Radiation Effect	Retention of Tensile Strength	ASTM G-53,ASTM G-54 & ASTM G-154	0.1N to 2500N/0.1N 1-15meter/1mm 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
		Retention of Elongation	ASTM G-53,ASTM G-54 & ASTM G-154	0.1N to 2500N/0.1N 1-15meter/1mm 0.01 to 150mm/0.01 0.5-1000mm/0.5/1mm
III.	LAMPS, LUMINAIRES & ACCESSORIES			

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 23 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Marking	IS 10322 (Part 1):2014 Clause6 of 10322 (Part-5/Sec 1):2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & 10322 Clause 20.6 (Part-5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	Qualitative Petroleum spirit Stop watch:0.1 to 99.9 sec/0.1 sec
		Construction	IS 10322 (Part 1):2014 Clause7 of 10322 (Part -5/Sec 1):2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause20.7 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	0.01-300mm/0.01mm Torque: 0.02-6 Nm/0.5Nm Cord anchorage Force:1N to 500N/0.75Nm Angle:0° to 90°/1°
		Creepage Distance and Clearances	IS 10322 (Part 1):2014 Clause8 of 10322 (Part5/Sec 1):2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013	Digimatic caliper 0-300mm/0.01mm Filler gauge 0.01 to 5 mm

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Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 24 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			10322 (Part -5/sec-8):2013 & Clause 20.8 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	
		Provision for Earthing	IS 10322 (Part 1):2014 Clause 9 of 10322 (Part5/Sec 1)2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause20.9 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	Current:1to 50A/0.01A Voltage:0.01 to 4.99/0.01 Volt
		Terminals	IS 10322 (Part 1):2014 Clause10 of 10322 (Part5/Sec 1)2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause20.10 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	0.01-300mm/0.01mm 0.02 to 6Nm/0.02 Nm 0.5 to 500N/1 & 0.5N Qualitative
		External and Internal	IS 10322 (Part 1):2014	Cord anchorage 0 to

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Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 25 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Wiring	Clause11 of 10322 (Part5/Sec 1):2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause20.11 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	250 N/1N Torque:0.02 to 6Nm/0.02Nm Qualitative
		Protection Against Electric shock	IS 10322 (Part 1):2014 Clause12 of 10322 (Part5/Sec 1):2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause20.12 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	0.1 to 99V/0.1V AC Jointed Test Finger force 0.5 to 10 N Qualitative
		Endurance Tests and Thermal Tests	IS 10322 (Part 1):2014 Clause13 of 10322 (Part5/Sec 1):2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause20.13 of	0.1 to 600V/0.1VAC 0.01 to 20A/0.01A AC 1 W to 12kW/1W ambient to 200°C/0.1°C

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 26 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	
		Resistance to Dust and Moisture	IS 10322 (Part 1):2014 Clause14 of 10322 (Part5/Sec 1)2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause20.14 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	Water Temp.:15 ± 10°C LC:0.1°C Time:0.1 to 99s/0.1s (IP1X, IP2X, IP3X, IP4X, IP5X, IP6X, IPX1,IPX2,IPX3,IPX4, IPX5) Temp:20-30°C/0.1°C RH:10 to 98%/ LC-1% 0.02-10kV/0.02 KV Qualitative
		Insulation Resistance and Electric Strength	IS 10322 (Part 1):2014 Clause15 of 10322 (Part5/Sec 1)2012 10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987 10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause20.15 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	Up to 2GΩ at 100-1000V DC 0.01 to 5kV AC/0.01kV Time:0.1 to 99s/0.1s Tripping current:1-200 mA/1 mA
		Resistance to Heat, Fire and Tracking	IS 10322 (Part 1):2014 Clause16 of 10322 (Part5/Sec 1) 2012/10322 (Part -5/sec-2):2012 10322 (Part -5/sec-3):2012 10322 (Part -5/sec-4):1987	Ball pressure Force: 20N, dia:0.01-10 mm Temp:50°C to 180°C/0.1°C Glow wire Temp.:550°C to 960°C/1°C

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 27 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			10322 (Part -5/sec-5):2013 10322 (Part -5/sec-6):2013 10322 (Part -5/sec-8):2013 & Clause 20.16 of 10322 (Part -5/sec-7):2017/ IEC 60598-2-20:2014 IEC 60598-1:2006	CTI:0.1 to 600V/0.1V at 50Hz Needle Flame:Upto 700°C/0.1°C Flame extinguishing time:1-999 sec/1 s
		Marking	Clause 7 of IS 15885 (Part 2/Sec 13):2012, IS 15885(Part -1):2011	Qualitative Petroleum spirit Stop watch:0.1 to 99.9 sec/0.1 sec
		Protection against accidental contact with live parts	Cl 8 of IS 15885 (Part 2/Sec 13):2012, IS 15885(Part -1):2011	Qualitative 0.1-70 volt/0.1 volt Test finger jointed Force 0.5-10 N/0.5N
		Terminals	IS 15885 Clause 9 (Part 2/Sec 13):2012, IS 15885(p-1):2011	Qualitative 0.01-300mm/0.01mm 0.02 to 6Nm/0.02 Nm Force:0.5 to 500N/0.5N
		Provision for Protective Earthing	IS 15885 Cl 10 (Part 2/Sec 13):2012, IS 15885(Part-1):2011	0.1 to 50A/0.1A AC 0.01 to 4.99/0.01 Volt
		Moisture Resistance and insulation	IS 15885 Cl 11 (Part 2/Sec 13):2012, IS 15885(Part-1):2011	IR:Up to 2GΩ at 100-1000V DC voltage applying Time:0 to 99s/1s
		Electric Strength	IS 15885 (Part 2/Sec 13):2012, IS 15885(Part-1):2011	Qualitative 0.01 to 5kV AC/0.01kV Time:0.1 to 99s/0.1s Tripping current:1-200 mA/1 mA
		Fault conditions	IS 15885 Cl 14	Qualitative

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 28 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			(Part 2/Sec 13):2012, IS 15885(Part-1):2011	0.1-600V/0.1V AC 0.1 to 20A/0.01A AC Watt:0.1-100W/0.1W Temp:amb to 250°C/0.1°C IR:Up to 2GΩ at 100-1000V DC 0.01 5kVAC/0.01kV & Time:0.1 to 99s/0.1s
		Construction	IS 15885 (Part 2/Sec 13): 2012, Clause No:16 IS 15885(Part-1):2011	Qualitative Visual Examination 0.1 to 600V/0.1V 0.01 to 20A/0.01A 0.1 to 100W/0.1W Ambient to 250°C/0.1°C
		Creepage Distance and clearance	IS 15885 Clause No:17 (Part 2/Sec 13):2012	Digimatic caliper 0.01-300mm/0.01mm Filler gauge 0.01 to 5 mm
		Screws, current-carrying parts and connections	IS 15885 Clause No:18 (Part 2/Sec 13):2012, IS 15885(Part-1):2011	0.01-300mm/0.01mm 1 to 6Nm/0.1Nm 0.02-1.5 Nm/0.02 Nm 0.5 to 500N/0.5N
		Resistance to heat, fire and tracking	IS 15885 Clause No:19 (Part 2/Sec 13):2012, IS 15885(Part-1):2011	Ball pressure Force: 20N, Dia:0.01-10 mm Temp:50°C to 180°C/0.1°C Glow wire Temperature: 550°C to 960°C/1°C CTI:0.1 to 600V/0.1V at 50Hz Needle Flame:0 to 700°C/0.1°C Flame extinguishing time:1-999 sec/1 sec
		Marking	IS 16102 Clause5	Qualitative

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 29 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
	LED Lamps For general purpose Lighting Services, Safety Requirements		(Part 1):2012	n-hexane Stop watch:0.1 to 99.9 sec/0.1 sec
		Interchangeability	IS 16102 Clause6 (Part 1):2012	Qualitative GO & NO GO gauge
		Protection Against accidental Contact With Live Parts	IS 16102 Clause7 (Part 1):2012	Qualitative 0.1-70 volt/0.1 volt Test finger jointed Force 0.5-10 N/0.5N
		Insulation Resistance and Electric Strength Test After Humidity	IS 16102 Clause8 (Part 1):2012	Up to 2GΩ at 100-1000V DC 0.01 to 5kV AC/0.01kV Time:0.1 to 99s/0.1s Tripping current:1-200 mA/1 mA
		Mechanical Strength	IS 16102 Clause9 (Part 1):2012	Qualitative Torsion test up to 4 Nm
		Cap Temperature Rise Test	IS 16102 Clause10 (Part 1):2012	0.1-199.9 °C/0.1°C 0.1-400 volt/0.1 volt
		Resistance To Heat	IS 16102 Clause11 (Part 1):2012	Ball pressure Force: 20N, dia:0.01-10 mm Temp:50°C to 180°C/0.1°C
		Resistance to Flame and Ignition	IS 16102 Clause12 (Part 1):2012	Qualitative Glow Wire Temperature: 550°C to 960°C/1°C Flame extinguishing time:1-999 sec/1 sec
		Fault Conditions	IS 16102 Clause13 (Part 1):2012	Qualitative Ambient to 199.9 °C/0.1°C Up to 2GΩ at 100-1000V DC
		Creepage Distance And	IS 16102 Clause14	Digimatic caliper

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 30 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Clearances	(Part 1):2012	0.01-300mm/0.01mm Filler gauge 0.01 to 5 mm
A.	Rotating Electrical Machines			
1.	Single phase A.C. Induction motors for general purpose	Test for no Load and full Load Current Power Input and Speed and Rated Voltage and Frequency	IS 996:2009 Clause. 12.5	Up to 300V, L.C. 1V Up to 2000 W, L.C. 1 W Up to 20 A, 0.1 A 0.1 RPM to 9999 RPM/Variable 0.1N-500N
		Momentary Overload Test	IS 996:2009 Clause. 12.1.2	0 to 300 V, L.C. 1 V 0 to 800 W, L.C. 1 W 0 to 24 hrs/0.01/1sec,
		Temperature Rise Test	IS 996:2009 Clause. 12.2	Qualitative 0 to 200 °C, L.C. 1 °C
		Insulation Resistance Test	IS 996:2009 Clause. 12.7	Qualitative 2 MΩ to 100 MΩ, L.C. Variable, 500 VDC 0-24 hrs/0.01/1 sec
		High Voltage Test	IS 996:2009 Clause. 13.1	Qualitative 0 to 5 kV, L.C. 0.1 kV, 0 to 24 hrs/0.01/1sec
		Moisture Proofness Test	IS 996:2009 Clause. 13.2	Qualitative 0.1 to 99.99% RH/0. 1% RH, L.C. 1% RH (-)20 °C to (+)60 °C, L.C. 0.1 °C
		Leakage Current Test	IS 996:2009 Clause. 13.3 IS 302 (Part 1)	0 to 5 mA/0.01mA, L.C. 0.01 mA 0 to 2000 W, L.C. 1 W 0 to 5000 W, L.C. 1W
		Dimension	IS 996:2009	Qualitative

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 31 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
			Annexure. F-4	0 to 150 mm, L.C 0.01 mm
		Starting Voltage	IS 2312:1967 Clause. 10.1	0 to 500 V, L.C. 0.1 V 0 to 5kW, L.C. 0.001 W, 0 to 30 A, 0.001 A
		Air Delivery	IS 2312:1967 Clause. 14.2	Qualitative 1 to 25 m/s L.C. 0.01 m/s
		Temperature Rise Test	IS 2312:1967 Clause. 14.3	Up to 200 °C L.C. 0.1 °C 0 to 350 V, L.C. 0.1 V 0 to 500 V, L.C. 0.1 V 0 to 5kW, L.C. 0.001 W, 0 to 30 A, 0.001 A
		Power Factor	IS 2312:1967 Clause. 14.6	1.000Lag/Lead/0.001 Lag/Lead
		AC Leakage Test	IS 2312:1967 Clause. 14.7	0 to 5 mA/0.01mA, 0 to 2000 W, L.C. 1 W, 0 to 5000 W, L.C. 1 W
		High Voltage Test	IS 2312:1967 Clause. 14.8	Qualitative 0 to 5 kV L.C. 0.01 kV 0-24 hrs/0.01/1 sec
		Insulation Resistance Test	IS 2312:1967 Clause. 14.9	Qualitative 2 MΩ to 100 MΩ, L.C. variable 500 VDC, 0-24 hrs/0.01/1 sec
		Earthing Continuity	IS 2312:1967 Clause. 14.10	0 to 50 A, L.C.0.1 A 0 to 9.99 V, L.C. 0.01 V
		Electrical Input Test	IS 2312:1967 Clause. 14.11	0 to 500 V, L.C. 0.1 V 0 to 5kW, LC.0.001W 0 to 30 A, 0.001 A
		Fan Speed	IS 2312:1967	0 to 99999 RPM/1 RPM

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
 Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh
Accreditation Standard ISO/IEC 17025: 2005
Certificate Number TC-6104 **Page 32 of 35**
Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		Flash Test	Clause. 14.12 IS 2312:1967 Clause. 14.13	0 to 500 V, L.C. 0.1 V Qualitative 0 to 5 kV L.C. 0.01 kV
IV.	WIRING ASSESSORIES			
		Marking	IS 1293-2005 Clause 8	Qualitative Visual inspection
		Dimension	IS 1293-2005 Clause 9.0	0.01-150mm/0.01mm 0.001-10/0.001mm 1-50mm/1mm
		Protection against electric shock	IS 1293-2005 Clause 10	Qualitative 0.1-70 volt/0.1 volt Test finger jointed Force 0.5-10 N/0.5N
		Provision for Earthing	IS 1293-2005 Clause 11	0.1 to 30A/0.1A AC 0.01 to 5V/0.01 Volt
		Terminals	IS 1293-2005 Clause 12 Table 10	0.01 to 150mm/0.01mm 0.5 to 80N/0.5 N
		Construction requirements of Fixed socket outlet	IS 1293-2005 Clause 13	Qualitative Visual
		Construction of plug and portable socket outlets	IS 1293-2005 Clause 14	Qualitative
		Interlocked socket-outlet	IS 1293-2005 Clause 15	Qualitative
		Resistance to ageing	IS 1293-2005 Clause 16	ambient to 250°C/1°C
		Resistance to Harmful ingress of water	IS 1293-2005 Clause 16	Qualitative
		Resistance to Humidity	IS 1293-2005 Clause 16	Qualitative 10 to 98%RH/1% RH Ambient to 35 °C/0.1°C
		Insulation Resistance	IS 1293-2005 Clause 17	Up to 20 GΩ

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 33 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
				@ 500Vdc/0.1V
		Electric Strength	IS 1293-2005 Clause 17	Qualitative 0.01 to 5kV/0.01kV
		Operation of Earthing contact	IS 1293-2005 Clause 18	Ambient to 100°C/0.1°C
		Temperature rise test	IS 1293-2005 Clause 19	Ambient to 100°C/0.1°C 1 to 50 A/0.1 A
		Making and Breaking Capacity	IS 1293-2005 Clause 20	Qualitative Pf 0.3-0.95, ±0.05 1 to 50A/0.01A 1 to 300 V/0.1 V
		Normal operation	IS 1293-2005 Clause 21	Qualitative Pf 0.3-0.95, ±0.05 1 to 50A/0.01A 1 to 300 V/0.1 V
		Force Necessary withdraw the plug	IS 1293-2005 Clause 22 Table 16	0.1 to 60N/0.1N
		Flexible cables and their connection	IS 1293-2005 Clause 23 Table 17 to 20	0.1 to 60N/0.1N cord flexing-90°, 1 to 999999/1 count
		Mechanical strength	IS 1293-2005 Clause 24 Table 21 & 22	Qualitative Impact test apparatus
		Resistance to Heat	IS 1293-2005 Clause 25	Ball pressure Force:20N, Dia:0.01-10 mm Temperature: Ambient to 200°C/0.1°C
		Compression Test	IS 1293-2005 Clause 25	Qualitative Weight 20 & 150 N
		Screw current carrying parts and connection	IS 1293-2005 Clause 26	0.02-6Nm/0.01Nm Qualitative
		Creep age distance, clearance and distance	IS 1293-2005 Clause 27 & Table 23	Digimatic caliper 0.01 to 150/0.01mm
		Resistance of insulating	IS 1293:2005	Glow wire

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound, Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104 **Page 34 of 35**

Validity 10.08.2017 to 09.08.2019 **Last Amended on** 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		material to abnormal heat, fire and tracking	Clause 28	Temperature: 650°C to 960°C/1°C Qualitative
		Resistance to rusting	IS 1293:2005 Clause 29	Qualitative Ambient to 100°C/LC-0.1 °C 10-98% RH/1% RH
		Additional Test on pins provided with insulating sleeves.	IS 1293:2005 Clause 30	Qualitative Ambient to 250°C/LC-0.1 °C 10-98% RH/1% RH
2.	Switches for Domestic and Similar Purposes	Marking and visual Inspection	Clause 8 IS 3854:1997	Qualitative 2.5 to 40A & 250V
		Checking of Dimension	IS 3854:1997 Clause 9	0.01-150 mm/0.01mm 0.001-25/0.001mm
		Protection against Electric Shock	IS 3854:1997 Clause 10	Qualitative 0.1-70 volt/0.1 volt Test finger jointed Force 0.5-10 N/0.5N
		Provision for Earthing	IS 3854:1997 Clause 11	Qualitative 0.1 to 50A/0.1A AC 0.01 to 4.99/0.01 Volt
		Terminal and screws	IS 3854:1997 Clause 12	Qualitative 0.01 to 150/0.01mm 0.02-6Nm/0.01Nm
		Constructional requirement	IS 3854:1997 Clause 13	Qualitative 0.01 to 150/0.01mm 0.02-6Nm/0.01Nm
		Mechanism	IS 3854:1997 Clause 14	Qualitative
		Resistance to ageing, to harmful ingress of water, and to humidity	IS 3854:1997 Clause 15	Qualitative (IPX4, IPX5) 10 to 98%RH/1% RH ambient to 35 °C/0.1°C
		Insulation resistance and	IS 3854:1997 Clause 16	Upto 2 GΩ @ 500 V DC

Laboratory Akshat Test Lab & Calibration Services, A-2/49, G.D. Steel Compound,
Site-IV, Industrial Area, Sahibabad, Ghaziabad, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6104

Page 35 of 35

Validity 10.08.2017 to 09.08.2019

Last Amended on 26.10.2018

Sl.	Product / Material Test	Specific Test Performed	Test Method Specification against which tests are performed	Range Testing / Limits Detection
		electric strength Test		0.01to 5 KV/0.01 KV
		Temperature rise	IS 3854:1997 Clause17	Ambient to 100°C/0.1°C 1 to 50 A/0.1 A
		Making and breaking capacity	IS 3854:1997 Clause18	Qualitative Pf 0.3-0.95, ±0.05 1to 50A/0.01A 1 to 300 V/0.1 V
		Normal operation	IS 3854:1997 Clause19	Qualitative Pf 0.3-0.95, ±0.05 1to 50A/0.01A 1 to 300 V/0.1 V
		Mechanical strength	IS 3854:1997 Clause 20	Qualitative Impact test apparatus
		Resistance to Heat	IS 3854:1997 Clause 21	Ball pressure Force:20N, Dia:0.0-10 mm Temp:50°C to 180°C/0.1°C
		Screw current carrying parts and connection	IS 3854:1997 Clause 22	0.02-6Nm/0.01Nm
		Creepage distance and clearance	IS 3854:1997 Clause 23	Digimatic caliper 0.01 to 150/0.01mm
		Resistance of insulating material to abnormal heat, to fire and to tracking	IS 3854:1997 Clause 24	Glow wire Temperature: 650°C to 960°C/1°C Qualitative
		Resistance to rusting	IS 3854:1997 Clause 25	Qualitative Ambient to 250°C/ LC-0.1 °C 10-98% RH/1% RH

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