

Laboratory **Shri Krishna Test House, B-70/1, Street No. 8, New Modern Shahdara, Mansarover Park, Shahdara, Delhi**

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

Certificate Number **TC-7952**

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**CHEMICAL TESTING**

I.	METALS & ALLOYS			
1.	Carbon Steel	Carbon	IS 228 (Part 1): 1987 (RA 2018)	0.05 % to 1.5 %
		Phosphorus		0.01 % to 0.5 %
		Nickel		0.1 % to 15.0 %
		Chromium		0.1 % to 25 %
		Molybdenum		0.1 % to 10.0 %
		Silicon		0.05 % to 5.0 %
		Sulphur		0.01 % to 0.25 %
		Manganese		0.01 % to 5.0 %
		Copper		0.05 % to 5.0 %
		Nitrogen		0.002 % to 0.5 %
2.	Stainless Steel	Carbon	IS 228 (Part 1): 1987 (RA 2018)	0.05 % to 1.5 %
		Phosphorus		0.01 % to 0.5 %
		Nickel		0.1 % to 15.0 %
		Chromium		0.1 % to 25 %
		Molybdenum		0.1 % to 10.0 %
		Silicon		0.05 % to 5.0 %
		Sulphur		0.01 % to 0.25 %
		Manganese		0.01 % to 5.0 %
		Copper		0.05 % to 5.0 %
		Nitrogen		0.002 % to 0.5 %
3.	Aluminium Alloys	Silicon	IS 504 (Part 1): 1963 (RA 2018)	0.01 % to 5.0 %
		Lead		Upto 0.10 %
		Iron		0.01 % to 2.0 %
		Copper		0.01 % to 10.0 %
		Zinc		0.01 % to 4.0 %
		Manganese	IS 504 (Part 5): 1963 (RA 2018)	0.01 % to 1.5 %
		Magnesium	IS 504 (Part 6): 1963 (RA 2018)	0.01 % to 12.0 %

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**Battal Singh**  
Program Manager

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		Nickel	IS 504 (Part 7): 1963 (RA 2018)	Upto 4.0 %
		Chromium	IS 504 (Part 8): 1963 (RA 2018)	0.1 % to 0.50 %
4.	Copper Alloys	Tin	IS 3685:1966 (RA 2006)	0.1 % to 12 %
		Lead		0.01 % to 15 %
		Zinc		1.0 % to 40.0 %
5.	Copper	Copper	IS 440:1964 (RA 2006)	92 % to 99.95 %
6.	Aluminium & its Alloys	Silicon	ASTM E 1251-11	0.015 % to 10.0 %
		Iron		0.015 % to 1.0 %
		Copper		0.001 % to 3.50 %
		Magnesium		0.015 % to 5.0 %
		Manganese		0.001 % to 1.0 %
		Titanium		0.002 % to 0.50 %
		Zinc		0.015 % to 2.0 %
		Nickel		0.02 % to 1.0 %
		Lead		0.02 % to 0.30 %
		Tin		0.02 % to 0.10 %
		Chromium		0.01 % to 0.50 %
		Vanadium		0.004 % to 0.20 %
		7.		Stainless Steel
Silicon	0.008 % to 0.75 %			
Manganese	0.10 % to 2.0 %			
Phosphorus	0.005 % to 0.05 %			
Sulphur	0.005 % to 0.05 %			
Chromium	0.01 % to 20.0 %			
Nickel	0.01 % to 10.0 %			
Molybdenum	0.05% to 0.20%			
Copper	0.05 % to 0.40 %			
Vanadium	0.05 % to 0.20 %			
Aluminium	0.008 % to 0.20 %			
Titanium	0.01 % to 0.40 %			
Boron	0.0003 % to 0.0010 %			
Cobalt	0.05 % to 0.25 %			

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8.	Copper & Copper Alloys	Niobium	ASTM E 1507-98:2003	0.015 % to 0.10 %
		Lead (Pb)		0.005 % to 0.03 %
		Tin		0.10 % to 0.75 %
		Lead		0.01 % to 5.0 %
		Zinc		10.0 % to 40.0 %
		Nickel		0.01 % to 2.0 %
		Manganese		0.005 % to 0.50 %
		Iron		0.001 % to 0.01 %
		Silicon		0.05 % to 0.18 %
		Aluminium		0.01 % to 5.0 %
9.	Zinc Alloys	Aluminium	IS 2599:1983 (RA 2010) (OES Method)	2.0 % to 6.0 %
		Copper		0.005 % to 5.0 %
		Magnesium		0.01 % to 0.50 %
		Iron		0.005 % to 0.2 %
		Lead		0.001 % to 0.01 %
		Cadmium		0.001 % to 0.006 %
		Tin		0.0003 % to 0.01 %
		Nickel		0.0002 % to 0.01 %
Chromium	0.001 % to 0.03 %			

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**ELECTRICAL TESTING**

I.	CABLE & ACCESSORIES			
1.	<b>PVC Insulated cable for working voltage Upto &amp; Including 1100 V</b>	Conductor Tensile Strength (For Aluminium)	IS 694:2010 (RA 2015) IS 8130:2013 IS 10810 (Part 2): 1984 (RA 2016)	1 N/mm <sup>2</sup> to 300 N/mm <sup>2</sup>
		Copper Annealing (For Copper)	IS 694:2010 (RA 2015) IS 8130:2013 IS 10810 (Part 1): 2013	0.5 mm to 300 mm
		Conductor Wrapping (For Aluminium)	IS 694:2010 (RA 2015) IS 8130:2013 IS 10810 (Part 3):1984 (RA 2016)	Qualitative
		Conductor Diameter (For Aluminium & Copper)	IS 694:2010 (RA 2015) IS 8130:2013 IS 10810 (Part 5): 1984 (RA 2016)	0.01 mm to 25 mm
		Overall dimensions	IS 694:2010 (RA 2015) IS 10810 (Part 6): 1984 (RA 2016)	0.02 mm to 150 mm
		Identification	IS 694:2010 (RA 2015)	Qualitative
		Core Identification	IS 694:2010 (RA 2015)	Qualitative
2.	<b>PVC Insulated (Heavy Duty) Cable for Working Voltage Upto &amp; Including 1100 V</b>	Cable Code	IS 694:2010 (RA 2015)	Qualitative
		Conductor Tensile Strength (For Aluminium)	IS 1554 (Part 1): 1988 (RA 2010) IS 8130:2013 IS 10810 (Part 2): 1984 (RA 2016)	1 N/mm <sup>2</sup> to 300 N/mm <sup>2</sup>
		Copper Annealing (For Copper)	IS 1554 (Part 1): 1988 (RA 2010)/IS 8130:2013 IS 10810 (Part 1): 1984 (RA 2016)	0.5 mm to 300 mm

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		Conductor Wrapping (For Aluminium)	IS 1554 (Part 1): 1988 (RA 2010) IS 8130:2013 IS 10810 (Part 3): 1984 (RA 2016)	Qualitative
		Conductor to Diameter (For Aluminium & Copper)	IS 1554 (Part 1):1988 (RA 2010) IS 8130:2013 IS 10810 (Part 5): 1984 (RA 2016)	0.01 mm to 25 mm
		Core Identification	IS 1554 (Part 1): 1988 (RA 2010)	Qualitative
		Identification	IS 1554 (Part 1): 1988 (RA 2010)	Qualitative
<b>II.</b>	<b>DOMESTIC ELECTRICAL APPLIANCES</b>			
<b>1.</b>	<b>Electric Iron</b>	Protection against access to live Parts	IS 366:1991 (RA 2018)	10 V to 200 V
		Power Input & Current	IS 366:1991 (RA 2018)	100 W to 4000 W 1 A to 25 A 10 V to 300 V
		Heating	IS 366:1991 (RA 2018)	1 °C to 199.9 °C
		Leakage Current & electric strength	IS 366:1991 (RA 2018)	1 mV to 999 mV 100 V to 4 kV 1 mA to 250mA
		Transient Over Voltage	IS 366:1991 (RA 2018)	100 V to 10 kV 1 µs to 12 µs Rise & Width , 0.1s to 99 s 1 count to 9999 count
		Moisture Resistance	IS 366:1991 (RA 2018)	20 % RH to 99 % RH (-)15 °C to 60 °C

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		Leakage Current & electric strength (After Humidity Treatment)	IS 366:1991 (RA 2018)	1 mV to 999 mV 100 V to 4 kV 1 mA to 250 mA
		Overload Protection of Transformer and associated circuit	IS 366:1991 (RA 2018)	Qualitative
		Abnormal Operation	IS 366:1991 (RA 2018)	Qualitative
		Stability & Mechanical Hazards	IS 366:1991 (RA 2018)	Qualitative
		Mechanical Strength	IS 366:1991 (RA 2018)	Qualitative
		Construction	IS 366:1991 (RA 2018)	Qualitative
		Internal Wiring	IS 366:1991 (RA 2018)	Qualitative
		Verification of Components	IS 366:1991 (RA 2018)	Qualitative
		Supply connection & Electrical flexible cord	IS 366:1991 (RA 2018)	0.01 mm to 25 mm 30 N to 100 N 2 Nm to 10 Nm
		Terminal for Electrical Conductors	IS 366:1991 (RA 2018)	Qualitative
		Provision for Earthing	IS 366:1991 (RA 2018)	1 V to 20 V 1 A to 30 A
		Screws & Connection	IS 366:1991 (RA 2018)	1 Nm to 10 Nm 0.01 mm to 200 mm
		Clearances, Creepage distances & Solid Insulation	IS 366:1991 (RA 2018)	0.01 mm to 200 mm
		Resistance to Heat & Fire	IS 366:1991 (RA 2018)	1 Nm to 10 Nm 0.01 mm to 200 mm Upto 60 s 1 A to 25 A 1 °C to 1200 °C
		Resistance to Rusting	IS 366:1991 (RA 2018)	Qualitative
		Radiation, to toxicity and similar Hazard	IS 366:1991 (RA 2018)	Qualitative

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		Finish	IS 366:1991 (RA 2018)	Qualitative
		Endurance	IS 366:1991 (RA 2018)	Qualitative
		Measurement of heating time up	IS 366:1991 (RA 2018)	0.01 minute to 60 minutes
		Measurement of sole Plate Temperature	IS 366:1991 (RA 2018)	1 °C to 1200 °C
		Measurement of Temperature Distribution	IS 366:1991 (RA 2018)	1 °C to 1200 °C
		Measurement of over swing temperature and heating up access temperature	IS 366:1991 (RA 2018)	1 °C to 1200 °C
		Measurement of cyclic fluctuation of temperature of hottest point	IS 366:1991 (RA 2018)	1 °C to 200 °C
		Measurement of thermostatic stability	IS 366:1991 (RA 2018)	1 V to 300 V 0.01 A to 30 A Upto 999999 digit
2.	Electric Immersion Water heater	Protection against access to live Parts	IS 368:2014	10 V to 200 V
		Power Input & Current	IS 368:2014	100 W to 4000 W 1 A to 25 A 10 V to 300 V
		Heating	IS 368:2014	1 °C to 199.9 °C
		Leakage Current & electric strength	IS 368:2014	1 mV to 999 mV 1 V to 4 kV 1 mA to 250 mA
		Transient Over Voltage	IS 368:2014	100 V to 10 kV 1 µs to 12 µs Rise & Width, 0.1s to 99 s 1 count to 9999 count
		Moisture Resistance	IS 368:2014	20 % RH to 99 % RH (-)15 °C to 60 °C
		Leakage Current & electric	IS 368:2014	1 mV to 999 mV

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		strength (After Humidity Treatment)		1 V to 4 kV 1 mA to 250 mA
		Overload Protection of Transformer and associated circuit	IS 368:2014	Qualitative
		Abnormal Operation	IS 368:2014	Qualitative
		Stability & Mechanical Hazards	IS 368:2014	Qualitative
		Mechanical Strength	IS 368:2014	Qualitative
		Construction	IS 368:2014	Qualitative
		Internal Wiring	IS 368:2014	Qualitative
		Components	IS 368:2014	Qualitative
		Supply connection & Electrical flexible cord	IS 368:2014	0.01 mm to 25 mm 30 N to 100 N 2 Nm to 10Nm
		Terminal for Electrical Conductors	IS 368:2014	Qualitative
		Provision for Earthing	IS 368:2014	1V to 20 V 1A to 30 A
		Screws & Connection	IS 368:2014	1 Nm to 10 Nm 0.01 mm to 200 mm
		Clearances , Creepage distances & Solid Insulation	IS 368:2014	0.01 mm to 200 mm
		Resistance to Heat & Fire	IS 368:2014 IS 302-2-21:2008	0.1 Nm to 10 Nm 0.01 mm to 200 mm Upto 60 s 1 A to 25 A 1 °C to1200 °C
		Resistance to Rusting	IS 368:2014	Qualitative
		Radiation, Toxicity and similar Hazard	IS 368:2014	Qualitative
		Finish	IS 368:2014	Qualitative
		Endurance	IS 368: 2014	Qualitative

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3.	Room Heaters	Protection against access to live Parts	IS 302-2-30:2007 (RA 2013)	10 V to 200 V
		Power Input & Current	IS 302-2-30:2007 (RA 2013)	100 W to 4000 W 1 A to 25 A 10 V to 300 V
		Heating	IS 302-2-30:2007 (RA 2013)	1 °C to 199.9 °C
		Leakage Current & electric strength	IS 302-2-30:2007 (RA 2013)	1 mV to 999 mV 1 V to 4 kV 1 mA to 250 mA
		Transient Over Voltage	IS 302-2-30:2007 (RA 2013)	100 V to 10 kV 1µs to 12 µs Rise & Width, 0.1s to 99 s 1count to 9999 count
		Moisture Resistance	IS 302-2-30:2007 (RA 2013)	20 % RH to 99 % RH (-)15 °C to 60 °C
		Leakage Current & electric strength (After Humidity Treatment)	IS 302-2-30:2007 (RA 2013)	1mV to 999 mV 1V to 4 kV 1mA to 250mA
		Overload Protection of Transformer and associated circuit	IS 302-2-30:2007 (RA 2013)	Qualitative
		Abnormal Operation	IS 302-2-30:2007 (RA 2013)	Qualitative
		Stability & Mechanical Hazards	IS 302-2-30:2007 (RA 2013)	Qualitative
		Mechanical Strength	IS 302-2-30:2007 (RA 2013)	Qualitative
		Construction	IS 302-2-30:2007 (RA 2013)	Qualitative
		Internal Wiring	IS 302-2-30:2007 (RA 2013)	Qualitative
		Components	IS 302-2-30:2007 (RA 2013)	Qualitative

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		Supply connection & Electrical flexible cord	IS 302-2-30:2007 (RA 2013)	0.01 mm to 25 mm 30 N to 100 N 2 Nm to 10 Nm
		Terminal for Electrical Conductors	IS 302-2-30:2007 (RA 2013)	Qualitative
		Provision for Earthing	IS 302-2-30:2007 (RA 2013)	1 V to 20 V 1 A to 30 A
		Screws & Connection	IS 302-2-30:2007 (RA 2013)	1 Nm to 10 Nm 0.01 mm to 200 mm
		Clearances , Creepage distances & Solid Insulation	IS 302-2-30:2007 (RA 2013)	0.01 mm to 200 mm
		Resistance to Heat & Fire	IS 302-2-30:2007 (RA 2013)	0.1 Nm to 10 Nm 0.01 mm to 200 mm Upto 60 s 1 A to 25 A 1 °C to 1200 °C
		Resistance to Rusting	IS 302-2-30:2007 (RA 2013)	Qualitative
		Radiation, Toxicity and similar Hazard	IS 302-2-30:2007 (RA 2013)	Qualitative
4.	<b>Stationary Storage Type Electric Water Heaters (Capacity Upto 50 liter, IPX1, IPX2)</b>	Protection against access to live Parts	IS 2082:2018	10 V to 200 V
		Power Input & Current	IS 2082:2018	100 W to 4000 W 1 A to 25 A 10 V to 300 V
		Heating	IS 2082:2018	1°C to 199.9 °C
		Leakage Current & electric strength	IS 2082:2018	1 mV to 999 mV 100 V to 4 kV 1 mA to 250 mA
		Transient Over Voltage	IS 2082:2018	100 V to 10 kV 1 µs to 12 µs Rise & Width

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				0.1 s to 99 s 1 count to 9999 count
		Moisture Resistance	IS 2082:2018	20 % RH to 99 % RH (-)15 °C % to 60 °C
		Leakage Current & electric strength (After Humidity Treatment)	IS 2082:2018	1 mV to 999 mV 100 V to 4 kV 1 mA to 250 mA
		Overload Protection of Transformer and associated circuit	IS 2082:2018	Qualitative
		Abnormal Operation	IS 2082:2018	Qualitative
		Stability & Mechanical Hazards	IS 2082:2018	Qualitative
		Mechanical Strength	IS 2082:2018	Qualitative
		Construction	IS 2082:2018	Qualitative
		Internal Wiring	IS 2082:2018	Qualitative
		Components	IS 2082:2018	Qualitative
		Supply connection & Electrical flexible cord	IS 2082:2018	0.01mm to 25 mm 30 N to 100 N 2 Nm to 10 Nm
		Terminal for Electrical Conductors	IS 2082:2018	Qualitative
		Provision for Earthing	IS 2082:2018	1 V to 20 V 1 A to 30 A
		Screws & Connection	IS 2082:2018	1 Nm to 10 Nm 0.01 mm to 200 mm
		Clearances, Creepage distances & Solid Insulation	IS 2082:2018	0.01 mm to 200 mm
		Resistance to Heat & Fire	IS 2082:2018 IS 302-2-21:2011 (RA 2016)	0.1 Nm to 10 Nm 0.01 mm to 200 mm Upto 60 s 1A to 25 A 1 °C to 1200 °C

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		Resistance to Rusting	IS 2082:2018	Qualitative
		Radiation, toxicity and similar Hazard	IS 2082:2018	Qualitative
		Verification of the Rated Capacity	IS 2082:2018	Upto 50000 ml
		Standing Loss per 24 Hours	IS 2082:2018	0.01 kWh to 999.99 kWh
		Hot water Output	IS 2082:2018	10 °C to 100 °C
		Reheating Time	IS 2082:2018	99 hrs , 99 minutes 99 s
		Mixing Factor	IS 2082:2018	1 °C to 200 °C
		Deviation of Dial Calibration	IS 2082:2018	1 °C to 200 °C
		Cycle Temperature Variation	IS 2082:2018	1 °C to 200 °C
		Finish	IS 2082:2018	Qualitative
		Endurance	IS 2082:2018	Qualitative
5.	<b>Electrical Instantaneous Water Heater</b>	Protection against access to live Parts	IS 8978:1992 (RA 2014)	10V to 200 V
		Power Input & Current	IS 8978:1992 (RA 2014)	100W to 4000 W 1A to 25 A 10V to 300 V
		Heating	IS 8978:1992 (RA 2014)	1 °C to 199.9 °C
		Leakage Current & electric strength	IS 8978:1992 (RA 2014)	1 mV to 999 mV 100 V to 4 kV 1 mA to 250 mA
		Transient Over Voltage	IS 8978:1992 (RA 2014)	100 V to 10 kV 1 µs to 12 µs Rise & Width 0.1s to 99 s 1 count to 9999 count
		Moisture Resistance	IS 8978:1992 (RA 2014)	20 % RH to 99 % RH (-)15 °C % to 60 °C

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		Leakage Current & electric strength (After Humidity Treatment)	IS 8978:1992 (RA 2014)	1mV to 999 mV 100V to 4 kV 1mA to 250mA
		Overload Protection of Transformer and associated circuit	IS 8978:1992 (RA 2014)	Qualitative
		Abnormal Operation	IS 8978:1992 (RA 2014)	Qualitative
		Stability & Mechanical Hazards	IS 8978:1992 (RA 2014)	Qualitative
		Mechanical Strength	IS 8978:1992 (RA 2014)	Qualitative
		Construction	IS 8978:1992 (RA 2014)	Qualitative
		Internal Wiring	IS 8978:1992 (RA 2014)	Qualitative
		Components	IS 8978:1992 (RA 2014)	Qualitative
		Supply connection & Electrical flexible cord	IS 8978:1992 (RA 2014)	0.01 mm to 25 mm 30 N to 100 N 2 Nm to 10Nm
		Terminal for Electrical Conductors	IS 8978:1992 (RA 2014)	Qualitative
		Provision for Earthing	IS 8978:1992 (RA 2014)	1 V to 20 V 1 A to 30 A
		Screws & Connection	IS 8978:1992 (RA 2014)	1 Nm to 10 Nm 0.01 mm to 200 mm
		Clearances, Creepage distances & Solid Insulation	IS 8978:1992 (RA 2014)	0.01 mm to 200 mm
		Resistance to Heat & Fire	IS 8978:1992 (RA 2014) IS 302-2-35:1993	0.2 Nm to 10 Nm 0.01 mm to 200 mm Upto 60 s 1 A to 25 A 1 °C to 1200 °C
		Resistance to Rusting	IS 8978:1992 (RA 2014)	Qualitative
		Radiation, toxicity and similar Hazard	IS 8978:1992 (RA 2014)	Qualitative
		Finish	IS 8978:1992 (RA 2014)	Qualitative

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6.	Mineral Filled Sheathed Heating Elements (Water Heater)	Endurance	IS 8978:1992 (RA 2014)	Qualitative
		Operation of flow switch	IS 8978:1992 (RA 2014)	Qualitative
		Protection against access to live Parts	IS 4159:2002 (RA 2017)	10V to 200 V
		Power Input & Current	IS 4159:2002 (RA 2017)	100 W to 4000 W 1 A to 25 A 10 V to 300 V
		Heating	IS 4159:2002 (RA 2017)	1°C to 199.9 °C
		Leakage Current & electric strength	IS 4159:2002 (RA 2017)	1 mV to 999 mV 100 V to 4 kV 1 mA to 250 mA
		Transient Over Voltage	IS 4159:2002 (RA 2017)	100 V to 10 kV 1 µs to 12 µs Rise & Width 0.1s to 99 s 1 count to 9999 count
		Moisture Resistance	IS 4159:2002 (RA 2017)	20 % RH to 99 % RH (-)15°C % to 60°C
		Leakage Current & electric strength (After Humidity Treatment)	IS 4159:2002 (RA 2017)	1mV to 999 mV 100V to 4 kV 1mA to 250mA
		Overload Protection of Transformer and associated circuit	IS 4159:2002 (RA 2017)	Qualitative
		Abnormal Operation	IS 4159:2002 (RA 2017)	Qualitative
		Stability & Mechanical Hazards	IS 4159:2002 (RA 2017)	Qualitative
		Mechanical Strength	IS 4159:2002 (RA 2017)	Qualitative
		Construction	IS 4159:2002 (RA 2017)	Qualitative
Internal Wiring	IS 4159:2002 (RA 2017)	Qualitative		
Components	IS 4159:2002 (RA 2017)	Qualitative		
Supply connection &	IS 4159:2002 (RA 2017)	0.01 mm to 25 mm		

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		Electrical flexible cord		30 N to 100 N 2 Nm to 10 Nm
		Terminal for Electrical Conductors	IS 4159:2002 (RA 2017)	Qualitative
		Provision for Earthing	IS 4159:2002 (RA 2017)	1 V to 20 V 1 A to 30 A
		Screws & Connection	IS 4159:2002 (RA 2017)	1 Nm to 10 Nm 0.01 mm to 200 mm
		Clearances, Creepage distances & Solid Insulation	IS 4159:2002 (RA 2017)	0.01 mm to 200 mm
		Resistance to Heat & Fire	IS 4159:2002 (RA 2017)	0.1 Nm to 10 Nm 0.01 mm to 200 mm Upto 60 s 1 A to 25 A 1 °C to 1200 °C
		Resistance to Rusting	IS 4159:2002 (RA 2017)	Qualitative
		Radiation, toxicity and similar Hazard	IS 4159:2002 (RA 2017)	Qualitative
		Leakage and hydrostatic Strength Tests	IS 4159:2002 (RA 2017)	0.5 kg/cm <sup>2</sup> to 14 kg/cm <sup>2</sup>

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**MECHANICAL TESTING**

I.	<b>RUBBER &amp; RUBBER PRODUCTS</b>			
1.	<b>Synthetic Rubber &amp; Products</b>	Materials & Construction Lining	IS 443:2017	Qualitative
		Reinforcement	IS 443:2017	Qualitative
	<b>Rubber Hose, Textile Reinforced, for General Purpose Water Hose</b>	Cover	IS 443:2017	Qualitative
		<b>Dimensions</b>	IS 443:2017	Upto 100 mm
		Internal Diameter		
		Concentricity	IS 15913	Qualitative
		Thickness of Lining	IS 443:2017	Upto 5.0 mm
	<b>Rubber Hoses, Textile Reinforced, for Compressed Air</b>	Thickness of Cover		Upto 5.0 mm
		Hardness Shore A	IS 3400 (Part 4): 2012	Upto 80 Shore A
		IRHD	IS 3400 (Part 4): 2012	Upto 90 IRHD
		<b>Physical Properties</b>	IS 3400 (Part 1): 2012	Upto 1200 N/mm <sup>2</sup>
		Tensile Strength of lining		
	<b>Rubber Hose and Hoses Assemblies for Measured Fuel Dispensing</b>	Tensile Strength of Cover	IS 3400 (Part 1): 2012	Upto 1200 N/mm <sup>2</sup>
		Elongation at break of lining	IS 3400 (Part 1): 2012	Upto 500 mm
		Elongation at break of cover	IS 3400 (Part 1): 2012	Upto 500 mm
		<b>Resistance to Ageing Test</b>	IS 3400 (Part 4): 2012	Upto 50 %
	<b>Rubber Gaskets for Pressure Cookers</b>	Change in Tensile Strength Lining		
Change in Tensile Strength in Cover		IS 3400 (Part 4): 2012	Upto 50 %	
<b>Rubber Hose for LPG</b>	Change in Elongation in Lining	IS 3400 (Part 4): 2012	Upto 50 %	
	Change in Elongation in Cover	IS 3400 (Part 4): 2012	Upto 50 %	
<b>Flexible Rubber Tubing for LPG</b>	Change in Elongation in Cover	IS 3400 (Part 4): 2012	Upto 50 %	
	Change in Hardness	IS 3400 (Part 4): 2012	Upto 50 %	



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		Change in Volume	IS 3400 (Part 4): 2012	Upto 25 %
		Resistance to Liquid	IS 3400 (Part 6): 2012	Qualitative
		Resistance to n-Pentane	IS 9573:2017, Annex-A	Upto 15 %
		Volume Expansion	IS 9573:2017, Annex-A	Qualitative
		Abrasion Resistance	IS 3400 (Part 3):2012	Qualitative
		Ambient Temperature Flexibility	IS 12656:2014	Qualitative
		Electrical Resistance	IS 443 (Part 4): 2017	Qualitative
		Pull Off	IS 2396:2017, Annex A	Qualitative
		<b>Finished Hose</b>	IS 443:2017	
		Proof Pressure		Qualitative
		Change in length at proof Pressure	IS 443:2017	Upto 25 %
		Change in Diameter at proof Pressure	IS 443:2017	Upto 25 %
		Bursting Pressure	IS 443:2017	Qualitative
		Adhesion between components	IS 3400 (Part 5): 1986 IS 3400 (Part 24): 2012	Upto 5 kN/m
		Ozone Resistance	IS 443 (Part 1):2017	Qualitative
		Flexibility at 23° C	IS 12656:2014	Qualitative
		Low temperature Flexibility	IS 12657:2014	Qualitative
		Compression Set	IS 3400 (Part 10): 1977	Qualitative
		Total Zinc Oxide	IS 7466:1994	Upto 5 %
		Heavy Metals	IS 7466:1994	Qualitative
2.	<b>Industrial Equipments / Instruments/ Products (Rubber Hose for Welding)</b>	<b>Construction</b>	IS 443:2017	Qualitative
		Lining		
		Reinforcement		Qualitative
		Cover		Qualitative
		Dimension		Upto 100 mm
		Thickness of Lining		Upto 5 mm
		Thickness of Cover		Upto 5 mm
		<b>Physical Properties</b>		
		Tensile Strength of lining	IS 3400 (Part 1): 2012	Upto 1200 N/mm <sup>2</sup>

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		Tensile Strength of Cover	IS 3400 (Part 1): 2012	Upto 1200 N/mm <sup>2</sup>
		Elongation at break of lining	IS 3400 (Part 1): 2012	Upto 500 mm
		Elongation at break of cover	IS 3400 (Part 1): 2012	Upto 500 mm
		<b>Resistance to Ageing Test</b>		
		Change in Tensile Strength Lining	IS 3400 (Part 4): 2012	Upto 50 %
		Change in Tensile Strength in Cover	IS 3400 (Part 4): 2012	Upto 50 %
		Change in Elongation in Lining	IS 3400 (Part 4): 2012	Upto 50 %
		Change in Elongation in Cover	IS 3400 (Part 4): 2012	Upto 50 %
		<b>Adhesion between components</b>		
		Lining to Reinforcement	IS 3400 (Part 5): 1986	Upto 5 kN/m
		Between Reinforcement	IS 3400 (Part 4): 2012	Upto 5 kN/m
		Reinforcement to Outer Cover	IS 3400 (Part 4): 2012	Upto 5 kN/m
		Pressure Requirements	IS 443:2017	Upto 100 kg/cm <sup>2</sup>
		Increase Diameter at working pressure	IS 3400 (Part 4): 2012	Upto 50 mm
		Change in Length	IS 3400 (Part 4): 2012	Upto 50 mm
<b>II.</b>	<b>PERFORMANCE/DURABILITY/SAFETY TEST</b>			
<b>1.</b>	<b>Domestic Pressure Cooker</b>	Capacity	IS 2347:2017	Upto 24 liter
		Fusible Plugs		Upto 4 kg/cm <sup>2</sup>
		Pressure Regulating Device		Qualitative
		Vent Pipe		Qualitative
		Spring		Qualitative

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		Vent Pipe Nut	IS 2347:2017	Qualitative
		Pressure Regulating Device		Qualitative
		Safety Pressure Regulating Device		Qualitative
		Air Pressure Test		Upto 4 kg/cm <sup>2</sup>
		Proof Pressure Test		Upto 7 kg/cm <sup>2</sup>
		Operating Test for P.R.D.		Upto 4 kg/cm <sup>2</sup>
		Test for Safety Pressure Relief Device		Upto 4 kg/cm <sup>2</sup>
		Bursting Pressure		Upto 10 kg
		Test for Removal of Lid Under Pressure		Upto 2 kg
		Test for Spring Loaded Mechanism		Upto 300 mm 0.10min to 30 min
2.	<b>Domestic Gas Stoves for Use with LPG</b>	Material	IS 4246:2002	Qualitative
		Design for Maintenance		Qualitative
		Rigidity & Stability		Qualitative
		Workmanship & Finish		Qualitative
		Gas Tap		Qualitative
		Injector Jets		Qualitative
		Burners		Qualitative
		Burner Pan supports		Qualitative
		Gas Soundness		Upto 1 kg/cm <sup>2</sup>
		Gas Inlet Connection		Qualitative
		Strength Rigidity		Qualitative
		Gas Consumption		Upto 100 l/h
		Ignition & Flame Travel		Qualitative
		Flame Stability		Qualitative
		Noise Control	Qualitative	
	Flash Back	IS 4246:2002	Qualitative	
	Formation of Soot		Qualitative	
	Resistance to draught		Qualitative	
	Combustion		0.001 to 2.0	

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3.	<b>Plastic Flushing Cistern for Water Closets and Urinals</b>	Fire Hazard & Limiting Temperature	IS 7231:1994	Upto 1200 °C
		Thermal Efficiency		Upto 100 °C
		Construction		Upto 25 mm
		Cistern		Upto 25 mm
		Cover		Qualitative
		Flush Pipe, Flush pipe Construction, Inlet & over flow holes, over flow pipe, working water level, freedom from self siphonage, Reduced water level, Distortion resistance test, Dead load test, Front thrust test & Impact Test		Upto 200 mm
		Operating Mechanism		Qualitative
		String (Chain)		Qualitative
		Finish		Qualitative
		Operational & Performance Requirements		Qualitative
		Flushing Arrangement		Qualitative
		Dead Load & Front Thrust		Upto 23 kg Upto 30 min
		Impact		Upto 1kg
4.	<b>Performance of Handles &amp; Handle Assemblies Attached to Cookware</b>	Endurance	IS 13395:1995	Qualitative
		Construction		Qualitative
		Materials		Upto 300 mm
		Selection & Size, Position with respect to cookware, Attachment to cookware, Fatigue Strength, & Burning Resistance		

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		Attachment to cookware		Qualitative
		Bending Strength		Upto 500 N
		torque Strength		Upto 5 Nm
		Impact Strength		Qualitative
		Fatigue Resistance		Qualitative
		Leakage & Thermal Insulation & Washing Resistance		Upto 300 °C 0.10 min to 30 min
		Heat Resistance		Upto 200 °C 0.10 min to 30 min
		Burning Resistance		Qualitative
5.	<b>SS Sink for Domestic Purpose</b>	Thickness of Sheet / Strip	IS 13983:1994	Upto 50 mm
		Internal Dia. Of Bowls, Bowl Locating limits & coordinating Sizes		Upto 1000 mm
		Bowl Locating limits		Upto 300 mm
		Sheet Coil Measurement		Upto 3 meter
		Construction & Workmanship		Upto 50000 lux
6.	<b>Mini Domestic Water Heater for Use with L.P.G.</b>	Materials	IS 15558:2005	Qualitative
		Connection		Qualitative
		Gas Inlet Connection		Qualitative
		Flame Visibility		Qualitative
		Gas Tape		Qualitative
		Flame Failure Device		Qualitative
		Ignition Device		Qualitative
		Protection Against accidental over Heating		Upto 200°C
		Water Rate Adjuster	IS 15558:2005	Qualitative
		Gas Soundness		Upto 1 kg/cm <sup>2</sup>
		Water Soundness		Upto 7 kg/cm <sup>2</sup>
		Thermal Efficiency		Upto 85 %
		Combustion		0.001 to 2.0

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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
		Gas Consumption		Upto 2000 l/h
		Ignition & Flame Travel		Qualitative
		Flame Stability		Qualitative
		Noise Control		Qualitative
		Flash Back		Qualitative
		Resistance to Draught		Qualitative
		Fire Hazard & Limiting Temperature		Upto 1200 °C
		Time for Temperature Rise		1s to 120 s
		Hot Water Output		Qualitative
<b>III.</b>	<b>MECHANICAL PROPERTIES OF METALS</b>			
<b>1.</b>	<b>Aluminium &amp; Ferrous Materials, Alloys &amp; Products</b>	Tensile Strength	IS 1608:2005 (RA 2011)	Upto 2000 N/mm <sup>2</sup>
		Yield Stress		Upto 1000 N/mm <sup>2</sup>
		0.2 % Proof Stress		Upto 1000 N/mm <sup>2</sup>
		Elongation		Upto 60 %
		Hardness	IS 1500 (Part 1): 2013	20 HBW to 500 HBW
		IS 1586 (Part 1): 2012	20 HRB to 100 HRB	
		IS 1586 (Part 1): 2012	20 HRC to 70 HRC	
		Bend	IS 1599:2012 (RA 2015)	Qualitative (Mandrel Diameter: 2 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm, 16 mm, 20 mm & 48 mm)
<b>2.</b>	<b>Aluminium Materials, Alloys &amp; Products</b>	Cupping	IS 10175:2012	0.1 mm to 2.5 mm
		Wrapping	IS 1755:1983 (Ref. 2011)	Upto 6.0 mm
		Head Forming	IS 740:1977 (Ref. 2006)	1.6 mm to 6.5 mm
<b>3.</b>	<b>Ferrous Materials, Alloys &amp; Products</b>	Corrosion Resistance	IS 10461(Part 1 & 2)	Qualitative

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4.	<b>Aluminium Materials, Alloys &amp; Products</b>	Material	IS 1660:2009, Cl. 4	Qualitative
		Fabrication	IS 1660:2009, Cl. 5	Qualitative
		Shape & Dimensions	IS 1660:2009, Cl. 6	Upto 200 mm
		Handle	IS 1660:2009, Cl. 7	Qualitative
		Workmanship & Finish	IS 1660:2009, Cl. 8	Qualitative
		Performance	IS 1660:2009, Cl. 8.6.1	Qualitative
		Ground Nut Oil test for Leakage	IS 1660:2009, Cl. 8.6.2	Qualitative
IV.	<b>PLASTICS AND POLYMERS</b>			
1.	<b>Plastic Pipes &amp; Accessories Specification for Thermoplastic Hoses</b>	Terminology	IS 7503:1988	Qualitative
		Requirement	IS 12585:1988, Cl. 4	Qualitative
		Construction	IS 12585:1988, Cl. 4.1	Qualitative
		Dimension & tolerance	IS 443:1975	Qualitative
		Loss in Mass on Heating	IS 12585:1988, Annex A	Qualitative
		Adhesion	IS 3400 (Part 5): 1986	Upto 5 kN/m
		Pressure	IS 443:1975	Upto 100 kg/cm <sup>2</sup>
		Minimum Bend Radius	IS 12585:1988, Cl. 4.3.4	Qualitative