

Laboratory **NSIC-Technical Services Centre, The National Small Industries Corporation Limited (A Govt. of India Enterprise), Aji Industrial Area, Bhavnagar Road, Rajkot, Gujarat**

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

Certificate Number **TC-7544**

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Validity **04.07.2018 to 03.07.2020**

Last Amended on **18.02.2019**

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.	ROTATING ELECTRICAL MACHINE				
1.	Pump and Motor	Marking	IS 996:2009 Cl.14.1	Qualitative	
	Single-phase a.c. industrial motors		IS 6595 (Part 1): 2018 Cl.14		
			IS 8034: 2018 Cl.14		
			IS 8472:1998 Cl.17		
			IS 9079: 2018 Cl.15		
			Horizontal Centrifugal Pumps : Agricultural and Rural Water Supply Purposes	IS 9283: 2013 Cl.15.1, Cl. 15.2	
				IS 12615: 2018 Cl.18	
				IS 14220: 2018 Cl.18	
				IS 10805:1986 Cl.08	
				IS 1710:1989 Cl.9.2.4	
			Submersible Pump sets	Terminal Marking	IS 996:2009 Cl.14.1
		IS 12615: 2018 Cl.9			
	Pumps-Regenerative or clear, cold water	Earthing	IS 996:2009 Cl.14	Qualitative	
		No load test at Rated Voltage	IS 996:2009 Cl.17.3 .a	0.10 kW to 120 kW 50 V to 320 V/Phase 0.20 A to 120 A/phase 10 rpm to 3000 rpm	
			IS 9079: 2018 Cl.11.8.1.d		
			IS 12615: 2018 Cl.16.1.3		
			IS 8034: 2018 Cl. 9.10.d		
	IS 14220: 2018 Cl.14.10.1.d				
	Electric Monoset Pumps for Clear, Cold Water for Agricultural and Water Supply Purposes	Reduced Voltage Running up test	IS 996:2009 Cl.14	50 V to 320V /Phase 47 Hz to 53 Hz	
			IS 9079: 2018 Cl.11.8.d		
			IS 9283:2013 Cl.16.1,16.2		
			IS 8034: 2018 Cl.9.10.e		
			IS 14220: 2018 Cl.14.10.1.e		
	Motors for Submersible Pumpsets Openwell		IS 8472:1998		

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	Submersible Pumpsets Foot valves, reflux valves or non-return valves and bore valves Pumps-Vertical Turbine Mixed and Axial Flow, for Clear Cold Water Line operated three phase a.c motors "Efficiency Classes and Performance Specification"		IS 12615:2018 Cl 16.1.5		
		Full Load Test	IS 996:2009 Cl.12.5.1,Cl.17.3.d	0.10 kW to 120 kW, 50 V to 320 V/ Phase	
			IS 12615:2018 Cl 16.2.3		
			IS 9283:2013, CL.17.1		
		Temperature rise test at rated voltage	IS 996:2009,Cl.17.3.e IS 8034:2018,Cl. 9.10.j IS 8472:1998 Cl.14.1.2.1.1 IS 12615:2018 Cl. 16.2.4 IS 9079:2018 Cl. 11.8.h IS 9283:2013 Cl.16.1.j IS 14220:2018 Cl. 14.10.1.j	5 °C to 273 °C 50 V to 320 V/ Phase 0.2 A/Phase to 120 A/ Phase	
		Temperature rise test at reduced voltage	IS 8034:2018 Cl. 9.10.k IS 8472:1998 14.1.2.1.2 IS 9079:2018 cl 11.8.j IS 9283:2013 Cl.16.1.k IS 14220:2018 Cl. 14.10.1.k	5 °C to 273 °C 50 V to 320 V/ Phase 0.2 A/Phase to 120 A/ Phase	
		Locked rotor test	IS 996:2009 Cl.14 IS 8472:1998 IS14220:2018 Cl. 14.10.1f IS 9079:2018 Cl. 11.8.e IS 8034:2018 Cl. 9.10.f IS 9283:2013 Cl. 16.1.f IS 12615:2018 Cl. 16.1.4	0.10 kW to 120 kW 50 V to 320 V/ Phase 0.2 A/Phase to 120 A/ Phase	
2.		Openwell Submersible Pumpsets	High Voltage test	IS 996:2009 Cl.17.3.h IS 12615:2018 Cl. 16.1.6 IS 8472:1998 IS 9079:2018 Cl. 11.8.b IS 9283:2013 Cl. 20 IS 8034:2018 Cl. 9.10.b IS 14220:2018 Cl. 14.10.1.b	Upto 5 kV AC
				IS 996:2009 Cl.12.7	1 MΩ to 2000 MΩ
			Insulation resistance	IS 996:2009 Cl.12.7	1 MΩ to 2000 MΩ

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		test	IS 8472:1998	
			IS 12615:2018 Cl. 16.1.1	
			IS 9079:2018 Cl. 11.8.C	
			IS 9283:2013 Cl.21	
			IS 8034:2018 Cl. 9.10.a	
			IS 14220:2018 Cl. 14.10.1.a	
		Pump Performance test: Head Discharge	IS 6595 (Part 1):2018 Cl. 12 IS 8034:2018 Cl. 11.1 IS 8472:1998 Cl.16.2 IS 1710:1989 Cl.16.2 IS 9079:2018 Cl.13 IS 14220:2018 Cl. 16	Upto 500 m Upto 300mm (0.08 to 65lps) 50 V to 320 V /Phase 0.2 A to 120 A/phase 0.10 kW to 120 kW
		Hydrostatic pressure test	IS 6595 (Part 1): 2018 Cl. 9.1	Upto 100 kg/cm ² 10 s to 900 s
			IS 8034:2018 Cl. 10.3	
			IS 8472:1998 Cl.13.3	
			IS 9079:2018 Cl. 12.6	
			IS 14220:2018 Cl. 15.5	
		Direction rotation	IS 6595 (Part 1): 2018 Cl.7	Qualitative
			IS 8034:2018 Cl. 8.7	
			IS 8472:1998 Cl.9	
			IS 9079:2018 Cl. 10.6.2.3	
			IS 1710:1989 Cl 8.1	
		Pull up and Pull out test	IS 996:2009 Cl.3.1.11, Cl.3.1.12 IS 8472:1998 Cl.14.1.2	50 v to 320 v /Phase 0.2 A to 120 A/phase 0.10 kW to 120 kW
		Measurement of Stator Resistance	IS 8034:2018 Cl. 9.10.c IS 8472:1998 IS 9079:2018 Cl. 11.8.a IS 9283:2013 Cl. 16.1.c IS 14220:2018 Cl.	0.001 Ω to 300 Ω

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			14.10.1.c IS 12615:2018 Cl. 16.1.2	
		Momentary over Load Test	IS 8034:2018 Cl. 9.1m	50 v to 320 v /Phase 0.2 A to 120 A/phase 0.10 kW to 120 kW
			IS 996:2009	
			IS 9283:2013 Cl. 18	
			IS 14220:2018 Cl. 14.1.1	
			IS 12615:2018 Cl. 16.2.5	
		Moisture Proofness Test	IS 996:2009	0 to 50 °C, 40 % to 95% RH
		Constructional Details/ Constructional features/ Constructional Requirements	IS 14220:2018 Cl. 7	Qualitative
			IS 8472:1998	
			IS 9079:2018 Cl. 7	
			IS 9283:2013 Cl. 5	
			IS 6595-1-2018 Cl. 6	
			IS 996:2009	
			IS 1710:1972	
		General Requirement	IS 6595-1 2018 Cl. 9	Qualitative
			IS 9079:2018 Cl. 10	
		Design features	IS 6595-1 2018 Cl. 8	Qualitative
			IS 9079:2018 Cl. 9	
			IS 14220:2018 Cl. 8	

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MECHANICAL TESTING

I.	AUTOMOTIVE COMPONENTS			
1.	Constant Speed Compression Ignition Diesel Engine	Dimensional Measurement for wear	IS 10000:Part V (IS 10001:1981) (IS 10002:1981)	Upto 150 mm 2.2 kW to 20 kW 20 kW to 150 kW
		Preliminary Running (as per customer demand)	IS 10000:Part V (IS 10001:1981) (IS 10002:1981)	2.2 kW to 20 kW 20 kW to 150kW
		Performance Test-Specific Fuel Consumption	IS 10000:Part VIII (IS 10001:1981) (IS 10002:1981)	2.2 kW to 20 kW 20 kW to 150 kW
		Governing Test	IS 10000:Part VII (IS 10001:1981) (IS 10002:1981)	Class A1, A2, B1 & B2 for 2.2 kW to 20 kW 20 kW to 150 kW
		Endurance Test-Power and Specific Fuel Consumption	IS 10000:Part IX (IS 10001:1981) (IS 10002:1981)	2.2 kW to 20 kW 20 kW to 150 kW
		Lubricating Oil Consumption	IS 10000:Part IV (IS 10001:1981) (IS 10002:1981)	0.01 to 0.20 ltr/hr 2.2 kW to 20 kW 20 kW to 150 kW
2.	Small Size Spark Ignition Engine	Rating Test Including Specific fuel consumption	IS 7347:1974 CI No. 9.1 (a)	Upto 20 kW
		Governing Test	IS 7347:1974 CI No. 9.1 (b), CI no. 9.3.1	Class I & II Upto 20 kW
		No Load and low speed test	IS 7347:1974 CI No. 9.1 (c),	Upto 20 kW
		Starting Test	IS 7347:1974 CI No. 9.1 (d)	Qualitative
		Endurance Test-Power and Specific Fuel	IS 7347:1974 CI No. 9.1 (e)	Upto 20 kW

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		Consumption		
		Marking (Name Plate)	IS 7347:1974 CI No. 10	Qualitative
		Rating test after endurance test- Power and Specific Fuel Consumption	IS 7347:1974 CI No. 9.1 (f)	Upto 20 kW
		Strip examination for checking of various component	IS 7347:1974 CI No. 9.1 (g)	Qualitative
		Reassembly, starting test and no load running	IS 7347:1974 CI No. 9.1 (h)	Upto 20 kW
3.	Internal Combustion Engines-Method of test for pressure charged Engines	Dimensional Measurement for wear	IS 13018:1990	Upto 150 mm 2.2 kW to 150 kW
		Preliminary Running (as per customer demand)	IS 13018:1990	2.2 kW to 150 kW
		Performance Test-Specific Fuel Consumption	IS 13018:1990	2.2 kW to 150 kW
		Governing Test	IS 13018:1990	Class A1, A2, B1 & B2 for 2.2 kW to 150 kW
		Endurance Test- Power and Specific Fuel Consumption	IS 13018:1990	2.2 kW to 150 kW
		Lubricating Oil Consumption	IS 13018:1990	0.01 to 0.20 ltr/hr 2.2 kW to 150 kW
4.	Engine Monoset pump for clear, cold, fresh water for agricultural purposes	Engine Testing	IS 11170:1985	Upto 150 mm
		Dimensional Measurement for wear	IS 10000:Part V	2.2 kW to 20 kW
		Preliminary Running (as per customer demand)	IS 10000:Part V	2.2 kW to 20 kW

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		Performance Test Specific Fuel Consumption	IS 10000:Part VIII	2.2 kW to 20 kW
		Governing Test	IS 10000:Part VII	Class A1, A2, B1 & B2 for 2.2 kW to 20 kW
		Endurance Test- Power and Specific Fuel Consumption	IS 10000:Part IX	2.2 kW to 20 kW
		Lubricating Oil Consumption	IS 10000:Part IV	0.01 to 0.20 ltr/hr 2.2 kW to 20 kW
		Material of construction	IS 11501 (Part 1) IS 2002 CI 5	Visual Inspection
		Visual Inspection	IS 11501 (Part 1) IS 2002 CI 14	Visual Inspection
		Pump Performance Test	IS 11501 (Part 1) IS 2002	Upto 500 m (Head) Upto 300 mm (0 to 60 lps) (Discharge) 0 to 900 sec
				Suction (Lift): 0.5 to 10 m
		Direction Rotation	IS 11501 (Part 1) IS 2002 CI 15.2	Visual Inspection
II.	MECHANICAL PROPERTIES OF METALS			
1.	Ferrous and Non-Ferrous Metals & Alloys	Tensile Test		
		Tensile Strength	IS 1608:2005 (RA 2010)	20 kN to 1000 kN 4 kN to 200 kN
		Yield Stress		20 kN to 1000 kN 4 kN to 200 kN
		Elongation		2% to 100%

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2.	High Strength deformed Steel Bars and wires for concrete Reinforcement	Bend Test	IS 1786:2008 IS 1599:1985	Bend Angle- Upto 180° Mandrel Dia.- 20,50,60,80 &150 mm Qualitative
3.	High Strength deformed Steel Bars and wires for concrete Reinforcement	Re-bend Test	IS 1599:1985	Bend Angle- 135°/157.5° Mandrel Dia.- 60, 80 & 140 mm Qualitative
4.	Steel Pipes and tubes	Flattening Test	IS 1786:2008	Dia. 50 mm to 200 mm Qualitative
5.	Steel Bars and Wires for Concrete Reinforcement	Mass/Meter	IS 2328:2005	0.1 kg/m to 20 kg/m
III.	PLASTICS AND POLYMERS			
A.	Plastic pipes & Accessories			
1.	Testing PE Lateral Pipe	Dimensions	IS 12786:2009	OD - 12 mm to 32 mm Wall thk - 1 to 5 mm
		Visual Appearance		Visual Check
		Hydraulic Characteristics (Quality & Acceptance test)		Upto 100 kg/cm ²
		Reversion Test		Upto 10 %
		Tensile Test		Upto 2950 N
		Environmental Stress Cracking Resistance		Qualitative

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2.	Testing of Emitting Pipes	Dimensions	IS 13488:2008	Upto 32 mm
		Visual Appearance		Qualitative (Visual Check)
		Uniformity of Emission Rate		Upto 4.2 kg/cm ²
		Emission Rate of Emitting Unit as a function of inlet pressure		Upto 4.2 kg/cm ²
		Flow path in emitting unit		Upto 150 mm
		Spacing of emitting unit		Upto 1000 mm
		Resistance to hydrostatic pressure at ambient temp.		Upto 10 kg/cm ²
		Resistance to hydrostatic pressure at elevated temp.		Upto 10 kg/cm ²
		Resistance to tension at elevated temp.		90 N
		Resistance to pull out of joints		90 N
	Environmental Stress Cracking		Qualitative	
	Emitting pipe exponent		Upto 4.2 kg/cm ²	
3.	HDPE Pipe for water supplies upto 400 mm nominal diameter IS:4984 2008	Colour Dimensions Visual Appearance Hydraulic Characteristics (Type & Acceptance test)	IS 4984:2016	Qualitative Upto 400 mm Qualitative 0 to 100 kg/cm ²

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		Reversion Test Migration Test Density Melt Flow Index		Upto 20 % 60 mg/l 0.6 g/cc to 10 g/cc Upto 30g/ 10 min
4.	UPVC Pipes for potable Water supplies upto 400 mm	Dimensions Visual Appearance Opacity Reversion Test VST Density Hydraulic Characteristics (Type & Acceptance test) Resistance to external blow at 0°C	IS 4985:2010	Upto 400 mm Qualitative Upto 100 % Upto 20 % Upto 200 °C 0.8 to 2.5g/cc 0.1 to 11 % 0 to 100 kg/cm ² Qualitative
5.	UPVC Screen and Casing pipes for bore / Tube well up to 250 mm	Colour Dimensions Visual Appearance Internal Diameter Specific Gravity Impact Strength at 0°C Tensile Strength VSP	IS 12818:2010	Qualitative Upto 250 mm Qualitative Qualitative 0.5 to 2.5 g/cc Qualitative 0 to 4900 N Up to 300°C

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