Laboratory	**Bureau of Indian Standards (Western Regional Office Laboratory), Plot No. E9, Road No. 8, M.I.D.C, Andheri (East), Mumbai, Maharashtra**	
Accreditation Standard	**ISO/IEC 17025: 2005**	
Certificate Number	**TC-6868**	**Page 1 of 18**
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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
		CHEMICAL TESTING		
I.	**WATER**			
1.	**Packaged Drinking Water & Packaged Natural Mineral Water**	Colour	IS 3025 (Part 4): 1983 (RA 2017)	1 to 10 Colour Unit
		Odour	IS 3025 (Part 5): 1983 (RA 2017)	Qualitative (Agreeable / Disagreeable)
		Taste	IS 3025 (Part 8): 1984 (RA 2017)	Qualitative (Agreeable / Disagreeable)
		Total Dissolved Solid	IS 3025 (Part 16): 1984 (RA 2017)	1 mg/l to 2000 mg/l
		pH	IS 3025 (Part 11): 1984 (RA2017)	4.0 mg/l to 12.0
		Chloride	IS 3025 (Part 32): 1988 (RA2014)	0.1 mg/l to 800 mg/l
		Sulphate	IS 3025 (Part 24):1986 (RA2014)	1 mg/l to 400 mg/l
		Alkalinity	IS 3025 (Part 23): 1986 (RA2014)	1 mg/l to 400 mg/l
II.	**FOOD AND AGRICULTURAL PRODUCTS**			
1.	**Biscuit**	Moisture	IS 1011:2002 (RA 2013)	0.5 % to 10 %
		Acidity of Extracted Fat		0.1 % to 2 %
		Acid Insoluble Ash		0.001 % to 2.0 %
2.	**Skimmed Milk Powder**	Titratable Acidity	IS 11766:1986 (RA 2012)	1 ml to 20 ml
		Fat Content	IS 11721:2013	0.1 % to 4.0 %
		Total Ash	IS 14433:2007	1 % to 15 %
3.	**Dairy Whitener**	Fat Content	IS 11721:2013	1 % to 30 %
		Ash Content	IS 14433:2007	1 % to 10 %

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			(RA 2012)	
		Sucrose Content	IS 4079:1967 (RA 2016) (Appendix C-2)	1 % to 40 %
III.	**BUILDING MATERIAL**			
1.	**Ordinary Portland Cement**	Silica	IS 4032:1985 (RA 2014) Cl. 4.3	5.0 % to 35 %
		Alumina	IS 4032:1985 (RA 2014) Cl. 4.6.1	0.5 % to 10 %
		Ferric Oxide	IS 4032:1985 (RA 2014) Cl. 4.5.1	0.5 % to 10 %
		Calcium Oxide	IS 4032:1985 (RA 2014) Cl. 4.7.2	1.0 % to 70 %
		Magnesia	IS 4032:1985 (RA 2014) Cl. 4.8.2	0.1 % to 10 %
		Sulphuric Anhydride	IS 4032:1985 (RA 2014) Cl. 4.9	0.1 % to 10 %
		Insoluble Residue	IS 4032:1985 (RA 2014) Cl. 4.10	0.5 % to 15 %
		Chlorides	IS 4032:1985 (RA 2014)	0.001 % to 1.0 %
		Loss on Ignition	IS 4032:1985 (RA 2014) Cl. 4.2	0.5 % to 10 %
2.	**Portland Pozzolana Cement**	Silica	IS 4032:1985 (RA 2014) Cl. 4.3	5.0 % to 30 %
		Alumina	IS 4032:1985 (RA 2014) Cl. 4.6.1	0.5 % to 10 %
		Ferric Oxide	IS 4032:1985 (RA 2014) Cl. 4.5.1	0.5 % to 10 %
		Calcium Oxide	IS 4032:1985 (RA 2014) Cl. 4.7.2	1.0 % to 70 %
		Magnesia	IS 4032:1985 (RA 2014)	0.1 % to 10 %

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			Cl. 4.8.2	
		Sulphuric Anhydride	IS 4032:1985 (RA 2014) Cl. 7.3	0.1 % to 10 %
		Insoluble Residue	IS 4032:1985 (RA 2014) Cl. 4.10	5.0 % to 60 %
		Chlorides	IS 4032:1985 (RA 2014)	0.001 % to 1.0 %
		Loss on Ignition	IS 4032:1985 (RA 2014) Cl. 4.2	0.5 % to 10 %
3.	**Portland Slag Cement**	Silica	IS 4032:1985 (RA 2014) Cl. 4.3	5.0 % to 30 %
		Alumina	IS 4032:1985 (RA 2014) Cl. 4.6.1	0.5 % to 10 %
		Ferric Oxide	IS 4032:1985 (RA 2014) Cl. 4.5.1	0.5 % to 10 %
		Calcium Oxide	IS 4032:1985 (RA 2014) Cl. 4.7.2	1.0 % to 70 %
		Magnesia	IS 4032:1985 (RA 2014) Cl. 4.8.2	0.1 % to 10 %
		Sulphur Trioxide	IS 4032:1985 (RA 2014) Cl. 6.11	0.1 % to 10 %
		Insoluble Residue	IS 4032:1985 (RA 2014) Cl. 4.10	0.5 % to 5 %
		Chlorides	IS 4032:1985 (RA 2014)	0.001 % to 1.0 %
		Loss on Ignition	IS 4032:1985 (RA 2014) Cl. 4.2	0.5 % to 10 %
4.	**White Portland Cement**	Silica	IS 4032:1985 (RA 2014) Cl. 4.3	5.0 % to 30 %
		Alumina	IS 4032:1985 (RA 2014) Cl. 4.6.1	0.5 % to 10 %
		Ferric Oxide	IS 4032:1985 (RA 2014) Cl. 4.5.1	0.01 % to 2.0 %

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Calcium Oxide	IS 4032:1985, RA 2014 Cl. 4.7.2	1.0 % to 70 %
		Magnesia	IS 4032:1985 (RA 2014) Cl. 4.8.2	0.1 % to 10 %
		Sulphur Trioxide	IS 4032:1985 (RA 2014) Cl. 6.11	0.1 % to 10 %
		Insoluble Residue	IS 4032:1985 (RA 2014) Cl. 4.10	0.1 % to 5.0 %
		Chlorides	IS 4032:1985 (RA 2014)	0.001 % to 1.0 %
		Loss on Ignition	IS 4032:1985 (RA 2014) Cl. 4.2	0.5 % to 10 %
IV.	**METALS & ALLOYS**			
1.	**Ferrous**			
a.	**Plain Carbon Steel, Low Alloy Steel &Tool Steel**	Carbon	IS 228 (Part 20): 2003 (RA 2014)	0.05 % to 2.5 %
		Sulphur	IS 228 (Part 20): 2003 (RA 2014)	0.01 % to 0.30 %
		Phosphorous	IS 228 (Part 3): 1987 (RA 2008)	0.01 % to 1.0 %
		Manganese	IS 228 (Part 2): 1987 (RA 2009)	0.1 % to 5.0 %
		Silicon	IS 228 (Part 8): 1989 (RA 2009)	0.05 % to 5.0 %
b.	**Stainless Steel**	Carbon	IS 228 (Part 20): 2003 (RA 2014)	0.05 % to 2.5 %
		Sulphur	IS 228 (Part 20): 2003 (RA 2014)	0.1 % to 0.20 %
		Phosphorous	IS 228 (Part 3): 1987 (RA 2008)	0.01 % to 0.20 %

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Silicon	IS 228 (Part 8): 1989 (RA 2009)	0.05 % to 2.0 %

ELECTRICAL TESTING

I.	**WIRING ACCESSORIES**			
1.	**Ceiling Roses**	Marking	Cl. 9 of IS 371:1999	Qualitative
		Dimensions	Cl. 10 of IS 371:1999	0 to 200 mm L C 0.01 mm
		Protection against Electric Shock	Cl. 11 of IS 371:1999	Qualitative
		Insulation Resistance	Cl. 15.5 of IS 371:1999	1 to 10 x 10^7 MΩ
		Electric Strength	Cl. 15.6 of IS 371:1999	0.01 to 3.0 kV ac L.C. 0.01 kV
		Temperature Rise Test	Cl 16 IS 371:1999	0.1 to 400 °C
2.	**Plugs and Socket Outlets of rated voltge up to and including 250 volts and rated current upto and including 16 Ampers**	Marking	Cl. 8 of IS 1293:2005	Qualitative
		Dimensions	Cl. 9 of IS 1293:2005,	0.01 to 150 mm (LC 0.01 mm)
		Protection against Electric Shock	Cl. 10 of IS 1293:2005,	Qualitative
		Insulation Resistance	Cl. 17.1 of IS 1293:2005	1 to 10 x 10^7 MΩ
		Electric Strength	Cl. 17.2 of IS 1293:2005	0.01 to 3.0 kV ac L.C. 0.01 kV
		Temperature Rise	Cl 19 of IS 1293:2005	0.1 - 400°C
		Force necessary to withdraw the Plug	Cl 22 of IS 1293:2005	1N -60 N
3.	**Switches for Domestic and Similar Purposes**	Marking	Cl. 8 of IS 3854:1997	Qualitative
		Checking of Dimensions	Cl. 9 of IS 3854:1997	0 .01- 200 mm LC 0.01mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Protection against Electric Shock	Cl. 10 of IS 3854:1997	Qualitative
		Insulation Resistance	Cl. 16.1 of IS 3854:1997	1 to 10 x 10^7 MΩ
		Electric Strength	Cl. 16.2 of IS 3854:1997	0.01 to 3.0 kV ac
		Temperature Rise	Cl 17 of IS 3854:1997	0.01 to 400°C
II.	**CABLES AND CONDUCTOR**			
1.	**PVC Insulated Cables for Working Voltages Upto and Including 1100 Volts**	Annealing test (for copper)	Cl 4 IS 694 :1990/ IS 10810 (Part 1) -1984	1 -1000%
		Tensile Test (for Aluminium)	Cl 4 IS 694 :1990/ IS 10810 (Part 2) -1984	0.1 N to 10 kN
		Wrapping test (Aluminium)	Cl 4 IS 694 :1990/ IS 10810 (Part 3) -1984	Qualitative
		Resistance Test	Cl 4 IS 694 :1990/ IS 10810 (Part 5) -1984	0.0001 Micro Ohm to 1.9999 k Ohm
		Thickness of Insulation and Sheath	Cl 10 & 13 IS 694 :1990/ IS 10810 (Part 6) -1984	0.001 to 25 mm
		Tensile Strength and Elongation at break of insulation and sheath	Cl 5 IS 694 :1990/ IS 10810 (Part 7) -1984	0.1 N to 10 kN 1 to 1000 %
		Insulation Resistance	Cl 5 IS 694 :1990/ IS 10810 (Part 43) -1984	1 to 10 x 10^7 MΩ
		High voltage Test (Water Immersion Test)	Cl 16.2 IS 694 :1990 IS 10810 (Part 45) -1984	0 .01 to 6 kV
		Overall Dimension	Cl 14 IS 694 :1990	0 .001- 25mm
2.	**PVC Insulated (HD) Cables for Working Voltages Upto and Including 1100 Volts**	Annealing test (for copper)	Cl 3 IS 1554 (Part1)-1988 IS 10810 (Part 1) -1984	1 -1000 %
		Tensile Test (for Aluminum)	Cl 3 IS 1554 (Part1)-1988 IS 10810 (Part 2) -1984	0.1 N to 10 kN
		Wrapping test (for Aluminium)	Cl 3 IS 1554 (Part1)-1988 IS 10810 (Part 3) -1984	Qualitative
		Conductor Resistance	Cl 3 IS 1554 (Part1)-1988	0.0001Micro Ohm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Test	IS 10810 (Part 5) -1984	-1.9999 k Ohm
		Test for Thickness of Insulation and Sheath	Cl 9 IS 1554 (Part1)-1988 IS 10810 (Part 6) -1984	0.001 to 25 mm
		Tensile Strength and Elongation at break of insulation and sheath	Cl 4 IS 1554 (Part1)-1988 IS 10810 (Part 7) -1984	0.1 N to 10 kN
		Thermal Stability	Cl 4 IS 1554 (Part1)-1988 IS 10810 (Part 60) -1984	Qualitative test
		Insulation Resistance Test	Cl 4 IS 1554 (Part1)-1988 IS 10810 (Part 43) -1984	1 to 10 x 10^7 MΩ
		High voltage Test	Cl 16.2 & 16.3 IS 1554 (Part1)-1988 IS 10810 (Part 45) -1984	01 kV to 6 kV
		Dimensions of Armouring materials (MS Wires, Formed Wires and Tapes for armouring)	Cl 13 IS 1554(Part1)-1988 IS 10810 (Part 36) -1984	0.001 mm to 25 mm
		Tensile Strength and Elongationat break of armouring materials	Cl 13 IS 1554(Part1)-1988 IS 10810 (Part 37) -1984	0.1N -10 KN
		Winding test for formed wires	Cl 13 IS 1554(Part1)-1988 IS 10810 (Part 39) -1984	Qualitative
		Resistivity	Cl 13 IS 1554(Part1)-1988 IS 10810 (Part 42) -1984	0.0001Micro Ohm - 1.9999 k Ohm
3.	**PVC Insulated Cables for Motor Vehicles**	Annealing test (For copper)	Cl 3 IS 2465-1984 IS 10810 (Part 1) -1984	0.1 N to 10 kN
		Conductor Resistance Test	Cl 3 IS 2465-1984 IS 10810 (Part 5) -1984	0.1Micro Ohm -1.9999 K Ohm
		Test for Thickness of Insulation and Sheath	Cl 7 IS 2465-1984 IS 10810 (Part 6) -1984	0 to 25mm LC 0.001mm
		Overall dimension of	Cl 11 IS 2465:1984	0to 25mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		cable		LC 0.001mm
		Tensile Strength and Elongation at break on insulation and sheath	Cl 4 IS 2465-1984 IS 10810 (Part 7) -1984	0.1 N – 10 kN
		High voltage Test	Cl 14 IS 2465-1984 IS 10810 (Part 45) -1984	0.01 kV to 6 kV
4.	**Cross Linked Polyethylene Insulated and PVC Sheathed Cables**	Annealing test (for copper)	Cl 3 IS 7098(Part1)-1988 IS 10810 (Part 1) -1984	1-1000%
		Tensile Test (for aluminium)	Cl 3 IS 7098(Part1)-1988 IS 10810 (Part 2) -1984	0.1 N to 10 kN
		Wrapping test (for Aluminium)	Cl 3 IS 7098(Part1)-1988 IS 10810 (Part 3) -1984	Qualitative
		Resistance Test	Cl 3 IS 7098(Part1)-1988 IS 10810 (Part 5) -1984	0.0001Micro Ohm - 1.9999 k Ohm
		Thickness of Insulation and Sheath	Cl 9, 12 and 14 of IS 7098(Part1)-1988 IS 10810 (Part 6) -1984	0.001 - 25mm
		Tensile Strength and Elongation at break on XLPE insulation	Cl 4 IS 7098(Part1)-1988 IS 10810 (Part 7) -1984	0.01 N to 10 kN
		Tensile Strength and Elongation at break on PVC Outer sheath	Cl 4 IS 7098 (Part1)-1988 IS 10810 (Part 7) -1984	0.1 N to 10 kN
		Volume Resistivity test	Cl 4 IS 7098(Part1)-1988 IS 10810 (Part 43) -1984	1 - 10 x 10^7 M ohms
		Thermal Stability	Cl 4 IS 7098(Part1):1988	Qualitative
		High voltage Test	Cl 16.2 of IS 7098 (Part1)-1988 IS 10810 (Part 45) -1984	0.01 kV to 6 kV
		Dimensions of	Cl 13 IS 7098(Part1)-1988	0.001 mm to 25 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Armouring materials (MS Wires, Formed Wires and Tapes for armouring)	IS 10810 (Part 36) -1984	
		Tensile Strength and Elongation at break of armouring materials	Cl 13 IS 7098(Part1)-1988 IS 10810 (Part 37) -1984	0.1 N to 10 kN L C
		Winding test for formed wires	Cl 13 IS 7098(Part1)-1988 IS 10810 (Part 39) -1984	Qualitative
		Resistivity	Cl 13 IS 7098(Part1)-1988 IS 10810 (Part 42) -1984	0.0001Micro Ohm -1.9999 k Ohm
5.	**Winding Wires for Submersible Motors**	Annealing test	Cl 3 of IS8783(Part4/sec1):1995, IS 8783(Part4/sec 3):1995 IS 10810 (Part 1) -1984	1-1000%
		Conductor Resistance	Cl 3 of IS8783(Part4/sec1):1995, IS 8783(Part4/sec 3):1995 IS 10810 (Part 1) -1984	0.1Micro Ohm - 1.9999 k Ohm
		Thickness of Insulation	Cl 3 of IS8783(Part4/sec1):1995, IS 8783(Part4/sec 3):1995 IS 10810 (Part 1) -1984	0.001 mm to 25mm
		Overall diameter	Cl 4 of IS8783(Part4/sec1):1995, IS 8783(Part4/sec 3):1995	0.001 mm to 25 mm
		Tensile Strength and Elongation at break of insulation	Cl 3 of IS8783(Part4/sec1):1995, IS 8783(Part4/sec 3):1995 IS 10810 (Part 1) -1984	0.1 N to 10 kN
		Volume resistivity Test	Cl 3 of IS8783(Part4/sec1):1995,	1 to 10 x 10^7 MΩ

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IS 8783(Part4/sec 3):1995 IS 10810 (Part 43) -1984	
		High voltage Test	Cl 4.6 of IS8783(Part4/sec1):1995, IS 8783(Part4/sec 3):1995 IS 10810 (Part 43) -1984	0.01 kV to 6 kV
6.	**Welding Cables**	Annealing test	Cl 4 IS 9857-1990 IS 10810 (Part 1) -1984	1 % to 1000 %
		Tensile Strength Test On Al. Wire	Cl 4 IS 9857-1990 IS 10810 (Part 2) -1984	0.1 N to 10 kN
		Wrapping test on Aluminium wire	Cl 4 IS 9857-1990 IS 10810 (Part 3) -1984	Qualitative
		Conductor Resistance test	Cl 4 IS 9857-1990 IS 10810 (Part 5) -1984	0.0001 Micro Ohm - 1.9999 k Ohm
		Test for Thickness of covering	Cl 9.2 IS 9857-1990 IS 10810 (Part 6) -1984	0.001 mm to 25 mm
		Tensile Strength and Elongation at break for covering	Cl 6 IS 9857:1990 IS 10810 (Part 7) -1984	0.1 N to 10 kN
		High voltage Test on cable	Cl 6 IS 9857:1990 IS 10810 (Part 45) -1984	0.01 kV to 6 KV
7.	**Elastomer Insulationed Cables**	Annealing test	Cl 3 of IS 9968(Part1):1988 IS 10810 (Part 1) -1984	1 to 1000 %
		Tensile Test (for aluminum)	Cl 3 of IS 9968(Part 1): 1988 IS 10810 (Part 2) -1984	0.1 N to 10 kN
		Wrapping test (Aluminium wire)	Cl IS 9968(Part 1):1988 IS 10810 (Part 3) -1984	Qualitative
		Conductor Resistance	Cl 3 of IS 9968(Part 1): 1988 IS 10810 (Part 1) -1984	0.0001Micro Ohm -1.9999 K Ohm
		Thickness of	Cl 12 &19	0.001 mm to 25 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Insulation and sheath	IS 9968(Part 1):1988 IS 10810 (Part 6) -1984	
		Overall diameter	Cl 20 of IS 9968(Part 1):1988	0.001 mm to 25 mm
		Tensile Strength and Elongation at break of insulation & sheath	Cl 4 &8 IS 9968(Part 1):1988 IS 10810 (Part 6) -1984	0.1 N to 10 kN
		Insulation Resistance Test	Cl 4 of IS 9968(Part 1):1988 IS 10810 (Part 43) -1984	1 to 10 x 10^7 MΩ
		High voltage Test	Cl 22.2 of IS 9968(Part 1):1988 IS 10810 (Part 45) -1984	0.01 kV to 6 kV
8.	**Low Carbon Galvanized Steel Wires, Formed Wires for Armouring of Cables**	Dimensions of armour	Cl 7 of IS 3975: 1999 IS 10810 (Part 36) -1984	0.001 mm to 25 mm
		Tensile test	Cl 8.1 of IS 3975: 1999 IS 10810 (Part 37) -1984	0.1 N to 10 kN
		Wrapping test	Cl 8.3 IS 3975: 1999 IS 10810 (Part 39) -1984	Qualitative
		Resistivity test	Cl IS 3975: 1999 IS 10810 (Part 42) -1984	0.0001 Micro Ohm -1.9999 k Ohm
9.	**Aluminium Conductor For Overhead Transmission Purposes**	Diameter of Aluminium wire	Cl 12.2 of IS 398 (Part1):1996	0.001 mm to 25 mm
		Breaking Load test	Cl 12.3 of IS 398 (Part1):1996	0.1 kN to 10 kN
		Wrapping test	Cl 12.4 of IS 398 (Part1):1996	Qualitative
		Resistance Test	Cl 12.5 of IS 398 (Part1):1996	0.0001 Micro Ohm to 1.9999 k Ohm
		Measurements of Lay	Cl 12.6 of	0.01 mm to 200 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Ratio/Direction of lay	IS 398 (Part1):1996	
10.	**Aluminum Conductor Steel Galvanized Steel Reinforced**	Diameter of Aluminium wire and steel wire	Cl 13.2 of IS 398 (Part2):1996	0 to 25 mm LC 0.001 mm
		Breaking Load test on Aluminium wire	Cl 13.3 of IS 398 (Part2):1996	0 to 10 kN LC 0.1 kN
		Breaking Load on steel wire	Cl 13.3 of IS 398 (Part2):1996	0 to 25 kN L.C. 0.05 kN
		Ductility test	Cl 13.4 of IS 398 (Part2):1996	0 to 200 mm L C 0.01 mm
		Wrapping test on Aluminium wires and steel wires Upto 2.59 mm dia	Cl 13.5 of IS 398 (Part2):1996	Qualitative test
		Resistance Test	Cl 13.6 of IS 398 (Part2):1996	0.1 Micro Ohm -1.9999 k Ohm
		Measurements of Lay Ratio/Direction of lay	Cl 13.8 of IS 398 (Part2):1996	0.01 mm to 200 mm
11.	**Aluminum Alloy Stranded Conductors**	Diameter of wire	Cl 7 of IS 398 (Part4):1994	0.001 to 25 mm
		Breaking Load test and Elongation test	Cl 12.2 & 12.3 of IS 398 (Part4):1994	0.1 N to 10 kN
		Resistance Test	Cl 12.4 of IS 398 (Part4):1994	0.0001 Micro Ohm -1.9999 k Ohm
		Measurements of Lay Ratio/Direction of lay	Cl 9 of IS 398 (Part4):1994	0.01 mm to 200 mm
12.	**Aluminum Conductors Galvanized Steel Reinforced for Extra High Voltage (400kV and above)**	Diameter of Aluminium and steel wires	Cl 13.3 of IS 398 (Part5):1992	0.001 mm to 25 mm
		Measurements of Lay Ratio/Direction of lay	Cl 9 of IS 398 (Part 5):1992	0.01 mm to 200 mm
		Breaking Load test on Aluminium wire	Cl 13.5.2 of IS 398 (Part5):1992	0.1 kN to 10 kN

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Breaking Load on steel wires	Cl 13.5.2 of IS 398 (Part5):1992	0.05 kN to 25 kN L.C.
		Ductility test	Cl 13.6 of IS 398 (Part5):1992	0.01 mm to 200 mm
		Wrapping test on Aluminium wires and steel wires upto 2.59 mm dia	Cl 13.7 of IS 398 (Part5):1992	Qualitative
		Resistance Test	Cl 13.8 of IS 398 (Part5):1992	0.0001Micro Ohm to 1.9999 k Ohm

MECHANICAL TESTING

I.	MECHANICAL PROPERTIES OF METALS			
1.	**Ferrous and Non Ferrous Metals and Alloys**	Ultimate Tensile Strength	IS 1608: 2005 (RA 2017)	2 to 100 kN (Load)
	Steel Plate, CRC sheet, Galvanized	Yield Strength		20 to 600 kN (Load)
	Steel Sheets, Carbon Steel	%Elongation		2 % to 80 %

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Sheet, Plate and Strip, HSDS Bar, Mild Steel Wire, Steel Tubes, Steel Pipes, Hollow steel sections	Dimension	IS 6240:2008 (RA 2013) IS 513 (Part 1):2016, IS 513 (Part 2) : 2016 IS 277:2003 (RA 2013) IS 1079:2017 IS 1786:2008 (RA 2017) IS 280:2006 (RA 2015) IS 1161:2014 IS 1239:2004 (RA 2014) IS 3589:2001 (RA 2017) IS 4923: 2017 IS 2062:2011 (RA 2016) IS 3601: 2006 (RA 2017) IS 9295:1983 (RA2016)	1 to 3000 mm (Measuring Tape) 0.01 to 300 mm (Digital Vernier Caliper) 0.001 to 50 mm (Digital Micrometer)
		Nominal Mass	IS 6240:2008 (RA 2013) IS 513 (Part 1):2016, IS 513 (Part 2) : 2016 IS 277:2003 (RA 2013) IS 1079:2017 IS 1786:2008 (RA 2017) IS 280:2006 (RA 2015) IS 1161:2014 IS 1239:2004 (RA 2014) IS 3589:2001 (RA 2017) IS 4923: 2017 IS 2062:2011 (RA 2016) IS 3601: 2006 (RA 2017) IS 9295:1983 (RA2016)	0.1 to 15100 (kg/m) 0.05 to 100 (kg/m)
2.	**Steel Bars, Wires, Strips, Sheet, Flats, Plates and Steel Sections**	Bend Test	IS 1599:2012	Qualitative (Mandrel Dia 10, 20, 24, 30, 32, 36, 40, 44, 48, 50, 64, 75, 80, 84, 100, 112, 125, 140, 175, 196 mm)

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**High Strength Deformed Steel Bar**	Rebend Test	IS 1786:2008 (RA 2013)	Qualitative (Mandrel Dia 10, 20, 24, 30, 32, 36, 40, 44, 48, 50, 64, 75, 80, 84, 100, 112, 125, 140, 175, 196 mm)
		Mean Projected Area of Ribs per unit length	IS 1786:2008 (RA 2013)	4 to 40 mm dia bars
		Mean Projected Area of Transverse Ribs per unit length	IS 1786:2008 (RA 2013)	4 to 40 mm dia bars
4.	**Steel Tubes**	Flattening Test	IS 2328 : 1983	Qualitative (Upto 350 mm)
		Drift Expansion Test	IS 2335 : 2005	Qualitative (101.6 to 152.4 mm Outside dia.) Cone Angle 60°
II.	**BUILDING MATERIALS**			
1.	**Concrete Cubes**	Compressive Strength	IS 516:1959 (RA2013)	100 to 900 Kn
III.	**PERFORMANCE/ DURABILITY/ SAFETY TEST**			
1.	**LPG Stove**	Gas soundness test	IS 4246:2002 (RA 2013) (Cl 13)	Qualitative, 1 to 200 mm Water Column
		Strength & Rigidity	IS 4246:2002 (RA 2013) (Cl.15)	0.01 to10 mm, Dead Weight (25 kg to 100 kg)
		Gas Consumption	IS 4246:2002 (RA 2013) (Cl 17)	flow meter 2 lt /rev
		Thermal Efficiency	IS 4246:2002 (RA 2013) (Cl 26)	Pan (3.7 lt, 4.8 lt, 6.1lt) 0.1 to 110°C

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Flame stability	(IS 4246:2002 (RA 2013) Cl 19)	Qualitative (1 to 300 mm water column) 0.1 °C to 110 °C
2.	**LPG Valve**	Dimension Min. Thickness of Valve	IS 8737:1995 (Cl. 6.10)	Upto 25 mm
		Pneumatic Test	IS 8737:1995 (Cl 8.2.1 to 8.2.3)	Qualitative (1 to 1000 mm Water column) (0.1 to 3.5 Mpa)
		Hydrostatic pressure test	IS 8737:1995 (Cl 8.1)	Qualitative (0.02 to 4.0 Mpa)
		Cycle Test	IS 8737:1995 (Cl. 9.2)	Qualitative (0.02 to 1.4 Mpa)
3.	**LPG Regulator**	Inlet & outlet connections Nozzle Length	IS 9798:2013 (Cl 5.5 & 5.6)	0.001 to 25 mm 0.01 to 300 mm
		Hydrostatic Test	IS 9798:2013 (Cl 5.5.1)	Qualitative (0.02 to 4.0 Mpa)
		Soundness Test	IS 9798:2013 (Cl 6.4)	Qualitative (1 to 1000 mm (Water column) 0.01 to to 0.35 MPa, 0.1 to 3.5 MPa 0.1 to 4.2 MPa
		Low & high Temperatures	IS 9798:2013 (Cl 8.10.2) &(Cl 8.10.3)	Qualitative - 20 °C to 65 °C
		Cycle Test	IS 9798:2013	Qualitative 0.1 to 4.2 Mpa 0.1 to 3.5 Mpa
4.	**LPG Cylinder**	Water Capacity	IS 3196 (Pt.1) : 2013 (Cl 14)	100 ml to 100 litre
		Dimension Thickness of LPG Cylinder sheet	IS 3196 (Pt.1) : 2013 (Cl. 8.4)	0.01 to 300 mm 0.001 to 25 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Acceptance Test Tensile strength Elongation %	IS 3196 (Pt.1) : 2013 (Cl 18)	2 kN to 100 Kn (100 to 2000 N/mm^2) 2 % to 80 %
		Hydrostatic Test	IS 3196 (Pt.1) : 2013 (Cl 15)	Qualitative (0.02 to 4.0 Mpa)
		Pneumatic Leakage Test	IS 3196 (Pt.1): 2013 (Cl 16)	Qualitative (0.02 to 1.4 Mpa)
		Burst Test	IS 3196 (Pt.1) : 2013 (Cl 17.2)	Qualitative (0.4 to 20.0 Mpa)
5.	**Pressure Cooker**	Capacity	IS 2347:2006 (RA 2016) (Cl 4.1)	10 to 1000 ml 20 to 2000 ml
		Operating Test for Pressure regulating device	(Cl 8.3)	Qualitative (0.005 to 0.2 Mpa)
		Test for safety release device	(Cl. 8.4)	Qualitative (0.002 to 0.4 Mpa)
		Proof pressure Test	(Cl 8.2)	Qualitative (0.002 to 1.0 Mpa)
		Bursting Pressure Test	(Cl 8.1.5)	Qualitative (0.002 to 1.0 Mpa)
6.	**Crop Protection Equipment Sprayers**			
a.	**Hand Operated Knapsack Sprayer**	Discharge Rate	IS 3906:1995 (RA 2016) (Cl.5.1)	Qualitative (0.002 to 1.0 Mpa)
		Strap length & Piston Height	IS 3906:1995 (RA 2016) (Cl. 6.3) (Cl.6.7)	0.01 to 300mm
b.	**Foot Sprayer**	Discharge Rate	IS 3652;1995 (RA 2016) (Cl. 5.1)	Qualitative (0.02 to 1.4 Mpa)
		Pedal length	IS 3652;1995 (RA 2016) (Cl. 6.2)	0.01 to 300mm
c.	**Rocker Sprayer**	Discharge Rate	IS 3062 : 1995 (RA 2016) (Cl. 5.1)	Qualitative (0.02 to 1.4 Mpa)
		Thickness of piston	IS 3062 : 1995	0.001 to 25 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			(RA 2016) (Cl.6.4/Cl.6.3.2 of IS 3652)	
d.	**Compression Sprayer**	Discharge Rate	IS 1971:1996 (RA 2016) (Cl.6.1)	Qualitative (0.002 to 1.0 MPa)
		Pump Cylinder I.D.	IS 1971:1996 (RA 2016) (Cl. 7.3)	0.01 to 300 mm
		Mass	IS 3906:1995 (RA 2016) (Cl 6.16)	0.1 to 100 kg
e.	**Sprayer Nozzle**	Discharge Rate	IS 3906:1995 (IS 3652:1995) (RA 2016) (F 3.1)	Qualitative (0.002 to 1.0 Mpa)
IV.	**PLASTIC AND POLYMERS**			
1.	**UPVC Pipe**	Dimension	IS 12235 (Pt.1):2004 RA 2014	1.2 to 20 mm thick, OD: 28 to 280 mm
		Longitudinal Reversion	IS 12235 (Pt.5/ Sec.1):2004 RA 2014(Immersion Method)	Ambient to 200 °C
		Internal Hydrostatic Pressure (Short term)	IS 12235 (Pt.8/ Sec.1):2004 RA 2014	1.0 to 5.4 MPa
		Resistance to external blows	IS12235 (Pt 9):2004 RA 2014	Qualitative (at 0 °C)
2.	**HDPE Pipe**	Dimension	IS 4984:2016	2.3 to 25 mm thick OD:25 mm to 280 mm
		Longitudinal Reversion	IS 4984:2016 (Air Oven Method)	Ambient to 200 °C