Laboratory		_	Reliable Analytical Laboratories Private Limited, Reliable House, 125 Indian Corpn Complex, Mankoli, Bhivandi, Thane, Maharashtra				
Accreditation Standard		d ISO/IEC 17025: 2005	ISO/IEC 17025: 2005				
Dis	cipline	Mechanical Testing		Issue Date	15.09.2014		
Certificate Number		T-1491		Valid Until	14.09.2016		
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S.No.	. Product / Material of Test	Specific Test Performed	Test Method Specificati against which tests are performed		e of Testing / s of Detection		
I.	PLASTICS, RUBBER	AND LEATHER					
1.	Container for Packing of Natural	Design, Shape and dimension	IS 15410 : 2003 Amendments I, II and III	Visua	al		
	Mineral Water and Packaged Drinking Water (Cups, glasses, bottles & Jars)	Manufacture, Workmanship, Finish and Appearance	IS 15410 : 2003 Amendments I, II and III	Visua	al		
		Capacity Nominal Brimful	Clause 5 of IS 2798 : 1998 (RA 2003) Amnd 2 1st Rev.		nl to 2 litres re 2 litres to 25		
		Wall thickness	Clause 5 of IS 2798 : 1998 (RA 2003) Amnd 2 1st Rev.	0.001	mm to 25 mm		
		Transparency	Annex A of IS 15410 : 2003 Amendments I, II and III	30%	to 100%		
		Leakage Test a. Vibration Leakage b. Closure Leakage c. Air Pressure Leakage	Clause 6 of IS 2798 : 1998 (RA 2003) Amnd 2 1st Rev.	Visua	al		
		Drop Test	Clause 8 of IS 2798 : 1998 (RA 2003) Amnd 2 1st Rev.	Visua	al		
		Water Potability test	IS 15410 : 2003 Amendments I, II and III Annex B	Orga	noleptic		

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Polyethylene	Vibration leakage test	IS 15609 : 2005 Annex. D Amnd 1	Visual
	Flexible Pouches For Natural	Water potability test	IS 15609 : 2005 Annex. E Amnd 1	Organoleptic
	Mineral Water & Packaged Drinking Water	Stack load Test	IS 15609: 2005 Annex. F Amnd 1	Visual
		Drop test	IS 15609: 2005 Annex. G Amnd 1	Visual
		Ink adhesion test for printed pouch	IS 15609: 2005 Annex. H Amnd 1	Visual
		Product resistance test for printed pouch	IS 15609 : 2005 Annex. J Amnd 1	Visual
3.	Polyethylene Films	Visual Appearance	IS 15609: 2005 Amnd 1	Visual
	For Natural Mineral Water &	Odour	IS 15609: 2005 Amnd 1	Organoleptic
	Packaged Drinking Water	Thickness	IS 2508 : 1984 (RA 2003) 2nd Rev. Amnd 3 & RA 2008	0.01 mm to 0.5 mm
		Width	IS 15609: 2005 Amnd 1	200 mm to 400 mm
		Tensile Strength Lengthwise & Crosswise	A-4 of IS 2508 : 1984 (RA 2003) 2nd Rev. Amnd 3 & RA 2008	150 to 400 kgf/cm ²
		Elongation at break	A-4 of IS 2508: 1984 Amnd 3	100% to 900%
		Dart impact resistance	A-6 of IS 2508 : 1984 (RA 2003) 2nd Rev. Amnd 3 & RA 2008	50 to 250 gf

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	High Density Polyethylene Pipes	Nominal Diameter	IS 4984: 1995 Amnd 6, Cl.3.4	10 mm to 300 mm L.C. 0.02 mm
	for Water supply	Outside Diameter	IS 4984: 1995 Amnd 6, Cl.6.1	10 mm to 300 mm L.C. 0.02 mm
		Wall Thickness	IS 4984: 1995 Amnd 6, Cl.6.2	1 mm to 25 mm L.C. 0.001 mm
		Ovality	IS 4984: 1995 Amnd 6, Cl.6.3.2	0.1 mm to 3 mm L.C. 0.02 mm
		Length	IS 4984: 1995 Amnd 6, Cl.6.4	Upto 10mtrs L.C. 10 mm
		Visual Appearance	IS 4984: 1995 Amnd 6, Cl.7	Visual
		Hydraulic Characteristics	IS 4984: 1995 Amnd 6, Annex B	Upto 280 mm dia Qualitative
		Reversion Test	IS 4984: 1995 Amnd 6, Annex C	$0.1 \text{ to } \pm 10\%$
		Melt Flow Rating	Cl.7 of IS 2530: 1963	Upto 4.0 g/10 mins
		Overall Migration Test	IS 9845 : 1998 & IS 10146 : 1982 Amnd 1	Upto 100 ppm
		Density	IS 4984 : 1995 Amnd 6, Cl.No.8.4 IS 7328 : 1992 Amnd 2 Annex A	900 to 1000 kg/m ³

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
5.	Unplasticized PVC Pies for Potable	Diameter	IS 12235 : 2004 Part 1	10 mm to 300 mm L.C. 0.02 mm
	Water Supplies	Mean outside diameter	IS 12235 : 2004 Part 1	10 mm to 300 mm L.C. 0.02 mm
		Diameter at any point	IS 12235 : 2004 Part 1	10 mm to 300 mm L.C. 0.02 mm
		Wall thickness	IS 12235 : 2004 Part 2	0.1 mm to 25 mm L.C 0.001 mm 1 mm to 400 mm L.C 1 mm
		Length	IS 12235 : 2004 Part 2	Upto 10 mtr L.C. 10 mm
		Dimensions of sockets	IS 4985 : 2000 Amnd 4 Cl.7.2	0.1 mm to 300 mm L.C. 0.01 mm 1 to 60° Angular L.C. 5 min
		Visual Appearance	IS 4985: 2000 Amnd 4 Cl.10.1	Visual
		Opacity	IS 12235 : 2004 Part 3	0 to 100%
		Reversion Test (Longitudinal)	IS 12235 : 2004 Part 5	0 to 10%
		Vicat Softening Temperature	IS 6307 : 1985 IS 2235 : 2004 Part 2 Appendix B	Ambient to 200 °C
		Hydrostatic Characteristics (Internal)	IS 12235 : 2004 Part 8	Upto 280 mm dia Qualitative

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Resistance to external blows at 0°C	IS 12235 : 2004 Part 9	Qualitative
		Density	IS 12235 : 2004 Part 14 IS 13360 : 2000 (Part 3/Sec 1)	1 to 5 g/cc
II.	TEXTILE MATER	IALS		
1.	Textiles & Garments	Count (Linear density) of thread removed from fabric (Woven & Knitted)	RALPL Inhouse method- RALPL/MECH-TEXTILE/01:2012	5 to 100 Tex
		Threads per unit length (Ends and Picks per dm)	IS 1963 : 1981 ASTM D 3775- 2012 ISO 7211-2 : 1984 BSEN 1049-2 : 1994	10 to 800 per dm
		Stitch Density in Knitted fabrics	ASTM D 3887 : 96 (2008)	10 to 800 per dm
		GSM (Weight per unit area or length)	IS 1964 : 2001 ASTM D 3776/D3776M-09a (2013) ISO 3801 : 1977	10 to 500 gsm
		Tensile Strength (Strip strength) and Elongation at break	IS 1969 : 2009 Part 1 ASTM D 5035 - 11 ISO 13934 -1 : 1999	20 N to 5000 N (Strength) 1% to 50% (Elongation)

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Textiles & Garments	Tensile Strength (Grab strength) and Elongation at break	IS 1969 : 2010 Part 2 ASTM D 5034 : 09 (2013) ISO 13934 -2 : 1999	20 N to 5000 N (Strength) 1% to 50% (Elongation)
		Width of fabric	IS 1954 : 1990 ASTM D 3774 : 96 (2012) ISO 22198 : 2006	1 to 300 cm
		Tear strength (Elmendorf method)	IS 6489 : 2011 Part 1 : 2011 ASTM D 1424 : 09 (2013) ISO 13937-1 : 2000 Cor 1 : 2004	3.1 to 50.2 N (320g to 5120 g)
		Martindale Abrasion Resistance	ASTM D 4966 : 2012 e1 ISO 12947-1 to 4 : 1998 Cor 1 : 2002 BS EN ISO 12947-1/2/3/4 : 1999	100 to 50000 rubs
		Pilling resistance	IS 10971 - Part-1 : 2011 ISO 12945-1 : 2000 BS EN ISO 12945-1 : 2001	Rating 1 to 5
		Crease Recovery Angle of fabric	IS 4681 : 1981 ISO 2313 : 1972 AATCC 66 : 2008	10 to 180 degree
		Bursting Strength	IS 1966 - Part 1 : 2009 (Hydraulic Method) ASTM D 3786/ D 3786M-2013 ISO 13938 : 1 : 1999	1.5 to 35 kgf/cm.sq

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Textiles & Garments	Seam Slippage and strength	ASTM D 434 : 1995 ISO 13936 - 1 & 2 : 2004	20 N to 5000 N
		Seam Failure	ASTM D 1683/D1683M-11a Upto 270 gsm	Seam Strength 20 N to 5000 N Efficiency: 1% to 100%
		Maximum force to seam rupture	ISO 13935 - 1 & 2 : 1999	20 N to 5000 N