

Laboratory	Spectro Research Lab Ventures (P) Ltd., G-3, Bajrangbali Industrial Area, Kanpur, Uttar Pradesh		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	31.05.2014
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I. TEXTILE & TEXTILE AUXILIARIES

1. Fibre, Filaments, Yarn, Cords, Fabrics, Garments & Made Ups, Auxilliaries, Medical Textile, Automotive Textiles, Geo Textiles	Water Repellency of fabrics by water spray test	IS 390-1975, (RA 2003)	Rating 0 to 100 (Qualitative)
	Water Repellency of fabrics by cone test	IS 7941-1976, (RA 2004)	1 to 400 ml
	Water Absorption & penetration of fabrics using Bundesmann Type Apparatus	IS 392-1989, (RA 2005)	1 to 650 ml
	Resistance to Penetration by water	IS 7016 (Part-7)-1986, (RA 2006)	50 to 900 mm
	Flammability & Flame Resistance	IS 11871-1986, (RA 1999) (Method-B)	1 to 7 Sec
	Flammability (Vertical Flame)	IS 11871-1986, (RA 2004) (Method-A)	1 to 30 Sec 1 to 300 mm
	Resistance to Accelerated ageing (Oven Method)	IS 7016 (Part-8)-1975, (RA 2006)	20 to 200°C
	Colour fastness to Rubbing	IS 766-1988, (RA 2004)	Rating 1 to 5
Colour fastness to Organic solvent	IS 688-1988, (RA 2004)	Rating 1 to 5	

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	Fibre, Filaments, Yarn, Cords, Fabrics, Garments & Made Ups, Auxilliaries, Medical Textile, Automotive Textiles, Geo Textiles	Colour fastness to Water	IS 767-1988, (RA 2004)	Rating 1 to 5
		Colour fastness to washing	IS/ISO-105-C-10-2006	Rating 1 to 5
		Colour fastness to Bleaching	IS 762-1988, (RA 2004)	Rating 1 to 5
		Colour fastness to Light (Xenon arc & daylight)	IS 2454-1985, (RA 2006), ISO 105-BO-2-1994 & IS 686-1985, (RA 2006)	Rating 1 to 8 (Blue Wool)
		Colour fastness to Dry cleaning	IS 4802-1988, (RA 1999)	Rating 1 to 5
		Colour fastness to Perspiration	IS 971-1983, (RA 2004)	Rating 1 to 5
		Colour fastness to Sea water	IS 690-1988, (RA 2004)	Rating 1 to 5
		Dimensional changes on washing of fabrics woven from rayon & synthetic fabrics	IS 1299-1984, (RA 2005)	0.01 to 15%
		Moisture content in grey & finished cotton	IS 199-1989, (RA 2005)	0.01 to 20%
		Analysis of binary mixtures of protein fiber with certain other non-protein fibers	IS 2006-1988, (RA 2004)	0.01 to 100%

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	Fibre, Filaments, Yarn, Cords, Fabrics, Garments & Made Ups, Auxilliaries, Medical Textile, Automotive Textiles, Geo Textiles	Analysis of binary mixtures of polyester fiber with cotton & or regenerated cellulose	IS 3416-1988	0.01 to 100%
		Analysis of binary mixtures of acrylic, certain modacrylics & certain other fiber	IS 3421-1988, (RA 1999)	0.01 to 100%
		Analysis of binary mixtures of regenerated cellulose fiber & cotton (Sodium Zincate Method)	IS 1889 (Part-1) 1976, (RA 2004)	0.01 to 100%
		Analysis of binary mixtures of regenerated cellulose fiber & cotton (Cadoxen Solvent Method)	IS 1889 (Part-2) 1976, (RA 2004)	0.01 to 100%
		Scouring loss in grey & finished cotton	IS 1383-1977, (RA 2004)	0.01 to 20%
		pH value of aqueous Extract	IS 1390-1983, (RA 2004)	1 to 14
		Dimensional Changes on soaking in water of fabrics (Other than wool)	IS 2977-1989, (RA 2005)	0.2 to 15%
		Water soluble matter	IS 3456-1966, (RA 2005)	0.01 to 25%

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	Fibre, Filaments, Yarn, Cords, Fabrics, Garments & Made Ups, Auxilliaries, Medical Textile, Automotive Textiles, Geo Textiles	Ash content in grey & finished cotton	IS 199-1989, (RA 2005)	0.01 to 11%
		Chloride content	IS 4202-1967, (RA 1999)	0.01 to 5%
		Sulphate content	IS 4203-1967, (RA 1999)	0.01 to 5%
		Barium activity number	IS 1689-1973, (RA 2004)	20 to 250
		Identification of the application classes of dyes (Cotton & other cellulose fiber)	IS 4472(Part-1) 1967, (RA 2006),	Qualitative
		Identification of the application classes of dyes (wool, silk & other Protein fiber)	IS 4472 (Part-2) 1968, (RA 2006)	Qualitative
		Identification of the application classes of dyes (Manmade fibers)	IS 4472 (Part-3) 1973, (RA 2006)	Qualitative
		Solvent extractable	IS 4390-2001	0.01 to 20%
		Conductivity of aqueous & organic extracts	IS 4420-1967, (RA 1999)	1 to 100 mho
	Nature of coating (PU) of disruptive polyurethane coated Fabric	DMSRDE/T&GS/89/377 (c) (Appendix-“A”)	Qualitative	

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II. METALS AND ALLOYS

1.	Carbon & Alloy Steel	Carbon	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.01 to 3.8%
		Silicon	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.005 to 3.0%
		Manganese	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.10 to 15.0%
		Sulphur	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.001 to 0.3%
		Phosphorous	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.005 to 0.50%
		Chromium	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.001 to 31.0%
		Molybdenum	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.001 to 10.0%

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	Carbon & Alloy Steel	Nickel	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.001 to 40.0%
		Aluminium	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.01 to 1.19%
		Boron	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.0002 to 0.12%
		Tungsten	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.001 to 20 %
		Cobalt	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.001 to 11.0%
		Copper	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.001 to 6%
		Magnesium	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.011 to 0.10%

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	Carbon & Alloy Steel	Lead	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.01 to 0.25%
		Titanium	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.005 to 0.80%
		Vanadium	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.01 to 2.0%
		Tin	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.01 to 0.10%
		Niobium	ASTM E-415-2008, ASTM E 1999 2011, ASTM E 1086 2008	0.01 to 1.20%
2.	Aluminium & its Alloy	Copper	ASTM-E-1251-2011	0.01 to 12.0%
		Magnesium		0.001 to 13.0%
		Silicon		0.001 to 24.0%
		Iron		0.001 to 2.0%
		Nickel		0.001 to 2.0%
		Manganese		0.001 to 1.5%
		Zinc		0.001 to 7.0%
		Lead		0.001 to 0.50%
		Tin		0.001 to 6.5%
		Titanium		0.001 to 0.3%
		Chromium		0.001 to 0.30%
		Vanadium		0.001 to 0.20%

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3.	Copper & its Alloys	Tin	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 12.0%
		Lead	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 20.0%
		Iron	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 6.0%
		Aluminium	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 12.0%
		Nickel	ASTM-E-1507-98 (2003), SOP/CHE/00	0.005 to 7.0%
		Manganese	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 4.0%
		Arsenic	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.30%
		Bismuth	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.10%
		Phosphorus	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.20%
		Silicon	ASTM-E-1507-98 (2003), SOP/CHE/00	0.005 to 2.0%
		Zinc	ASTM-E-1507-98 (2003), SOP/CHE/00	0.005 to 45.0%
Silver	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.01%		

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4.	Zinc & Zinc Alloys	Aluminium	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 5.0 %
		Copper	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 1.2%
		Magnesium	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 1.0 %
		Lead	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.5 %
		Cadmium	ASTM-E-1507-98 (2003), SOP/CHE/00	0.005 to 0.50 %
		Nickel	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 1.0 %
		Tin	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 2.5 %
		Iron	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 0.2 %
		Chromium	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 0.1 %
		Manganese	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 0.1 %
5.	Lead, Tin & Antimony Alloys	Tin	ASTM-E-1507-98 (2003), SOP/CHE/00	0.005 to 99.9 %
		Antimony	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 99.9%
		Lead	ASTM-E-1507-98 (2003), SOP/CHE/00	0.01 to 99.9%

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	Lead, Tin & Antimony Alloys	Copper	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 7.0 %
		Arsenic	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.30 %
		Bismuth	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.20 %
		Iron	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.10 %
		Silver	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.10 %
		Nickel	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.10 %
		Cadmium	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.30 %
		Zinc	ASTM-E-1507-98 (2003), SOP/CHE/00	0.001 to 0.20 %

III. METALLIC COATINGS AND TREATMENT SOLUTIONS

1. Metallic coatings	Uniformity of coating on Zinc coated Articles	IS 2633-1986, (RA 2006)	Qualitative
	Determination of Mass of Zinc coating on Zinc coated iron & Steel Article	IS 6745-1972, (RA 2006)	1 to 1000 g/m ²

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IV.	Corrosion Tests	Salt Spray Test (NSS)	ASTM B 117-11, ISO-9227-2006 (E), ISO-10289-1999	Qualitative
V. RUBBER & SYNTHETIC RUBBER				
1.	Natural Rubber & Synthetic Rubber	Carbon Black for vulcanized Rubber	IS 3400(Part-22)1984, Rea-1998	0.01 to 30%
		Rubber Hydrocarbon for vulcanized Rubber	IS 6110-1983, Rea-2006	0.01 to 50%
		Total polymer for vulcanized Rubber (Indirect Method)	IS 3400(Part-22)1984, Rea-1998, IS 6110 (App-A) 1983, IS 5915 (App-A) 1970	0.01 to 60%
		Total Ash	IS 3400(Part-22)1984, Rea-1998, I S 6110 (App-A) 1983, IS 5915 (App-A) 1970	0.5 to 20%
		Total Extract	IS 3400(Part-22)1984, Rea-1998, IS 6110 (App-A) 1983, IS 5915 (App-A) 1970	0.5 to 20%
		Organic Sulphur	IS 3400(Part-22)1984, Rea-1998, IS 6110 (App-A) 1983, IS 5915 (App-A) 1970	0.01 to 5%
		Identification of Rubber	IS 3400(Part-22)1984, Rea-1998	Qualitative

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VI. LEATHER

1. Leather & Synthetic Leather	Volatile Matter	IS 582 (LC-1) 1970, (RA 2003)	0.1 to 25%
	Total Ash	IS 582 (LC-3) 1970, (RA 2003)	0.01 to 20%
	Solvent Extractable Substance	IS 582 (LC-4) 1970, (RA 2003)	0.2 to 20%
	Water soluble substance	IS 582 (LC-6) 1970, (RA 2003)	0.1 to 25%
	Sulphated ash of water soluble	IS 582 (LC-7) 1970, (RA 2003)	0.1 to 20 %
	Water insoluble ash	IS 582 (LC-8) 1970, (RA 2003)	0.1 to 10 %
	Chromic oxide	IS 582 (LC-10) 1970, (RA 2003)	0.1 to 10 %
	pH value of water soluble	IS 582 (LC-18) 1970, (RA 2003)	1 to 14
	Colour Fastness to Rubbing (Dry & Wet)	IS 6191 (LF-9) 1971, (RA 2009)	Qualitative
	Bound Organic Substance	IS 582 (LC-21) 1970, (RA 2009)	0.1 to 50%
	Degree of Tannage	IS 582 (LC-21) 1970, (RA 2009)	5 to 80
	Hide Substance	IS 582 (LC-5) 1970, (RA 2009)	10 to 90
	Differential Number	IS 582 (LC-18) 1970, (RA 2009)	0.01 to 0.8

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VII. PAINTS AND SURFACE COATING

1. Paints, Powder Coatings & Enamels	Water Content on liquid paints	IS 101 (Part-2, Sec-1) 1988, (RA 1999)	0.1 to 50%
	Volatile Matter on liquid paints	IS 101 (Part-2, Sec-2) 1988, (RA 1999)	0.1 to 80%
	Flash Point on liquid paints	IS 101 (Part-1, Sec-6) 1987, (RA 1999)	25 to 100°C
	Weight, kg/10liters on liquid paints	IS 101 (Part-1, Sec-7) 1987, (RA 1999)	5 to 20 kg
	Accelerated Storage Stability	IS 2932-2003 (Annex-F)	Qualitative
	Resistance to acid	IS 2932-2003 (Annex-D), IS 9862-1981 (Appendix-B), ICF/MD/SPEC-045 (Annexure-A), IS 13871-1993 (Annexure-C)	Qualitative
	Resistance to alkali	IS 2932-2003 (Annex-E), IS 9862-1981 (Appendix-C), ICF/MD/SPEC-045 (Annexure-B), IS 13871-1993 (Annexure-C)	Qualitative
	Resistance to Lubricating Oil/Petrol	IS 101 (Part-7/S-2) 1990	Qualitative
Resistance to Chlorine	IS 9862-1981 (Appendix-D)	Qualitative	

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	Paints, Powder Coatings & Enamels	Resistance to water	IS 133-2004 (Annexure-D), IS 9862-1981 (Appendix-A), IS 101 (Part-7, Sec-1)-1989	Qualitative
		Viscosity by ford cup No-4	IS 101 (Part-1, Sec-5) 1989, (RA 1999)	1 to 500 sec
		Pigment Content	IS 101 (Part-8, Sec-2) 1990, RA 1999)	0.2 to 70%
		Chromic Anhydride	IS 2074-1992 (RA 2002)	0.2 to 20%
		Zinc Oxide	IS 2074-1992 (RA 2002)	0.2 to 20%
		Fineness of grind	IS 101 (Part-3/Sec-5)-1987	1 to 90µ
		Total Non Volatile Matter & Non Volatile Vehicle	IS 101 (Part-8, Sec-2) 1990, (RA 1999)	0.1 to 90%
		Phthalic Anhydride of Non Volatile Vehicle	IS 101 (Part-8/Sec-4)-1993	0.1 to 50%
2.	Paints, Enamels & Varnishes	Resistance to salt spray	IS 101 (Part-6/sec-1)-1988 (RA 2005)	Qualitative
		Resistance to Corrosion	IS 101 (Part-6/Sec-1)-1988 (RA 2005)	Qualitative

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VIII. PLASTICS & RESINS

1. HDPE/LDPE/LLDPE Films/Granules	pH of Water Extract	IS 1060 (Part-1) 1966, (RA 2011) (Method-10)	1 to 14
	Water soluble matter	JSS 9330-03 (Annexure-A)	0.001 to 10%
	Ash Content	IS 1060 (Part-1) 1966, (RA 2011) (Method-11)	0.001 to 10%
HDPE/LDPE/LLDPE Films/Granules	Water Soluble Chlorides	IS 1060 (Part-2) 1960 (Method-17)	0.001 to 10%
	Water Soluble Sulphates	IS 1060 (Part-2) 1960 (Method-18)	0.001 to 10%
	Solubility in Organic Solvents (Acetone/ Benzene/ Toluene/ Ethyleacetate)	JSS 9330-03 (Annexure-B/C/D)	0.001 to 10%
	Effect of Organic Solvents	JSS 9330-03 (Annexure-E)	Qualitative

IX. LUBRICANTS

1. Lubricating oils, Turbine Oils, Greases, Lubricant additives	Flash Point	IS 1448 (Part-69) 1969, (RA 2003)	40 to 350°C
	Color	IS 1448 (Part-12) 1967, (RA 2008)	Qualitative
	Total Acidity	IS 1448 (Part-2) 2007	0.01 to 10 mg KOH/gm
	Ash Content	IS 1448 (Part-4) 1984, (RA 2002)	0.01 to 50%
	Distillation	IS 1448 (Part-18) 1991, (RA 2000)	1 to 350°C
	Evaporation loss in Grease	IS 1448 (Part-61) 1974, (RA 2008)	0.01 to 10%

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	Lubricating oils, Turbine Oils, Greases, Lubricant additives	Kinematics Viscosity, 40°C, 60°C, 100°C	IS 1448 (Part-25) 1976, (RA 2007)	5 to 450 cst
		Oil Separation on storage	IS 1448 (Part-85) 1976	0.1 to 10%
		Saponification Value	IS 1448 (Part-55) 2004	0.01 to 5%
		Drop Point	IS 1448 (Part-52) 1971	40 to 150°C
		Pour Point	IS 1448 (Part-10) 1970	-15 to 0°C
X. WATER				
1.	Water (Drinking Water, Water for Food, Water for Ice, Mineral Water)	Colour	IS 3025 (Part-4) 1983, (RA 2006)/ APHA 2120-2012 (22 nd Edition)	1 to 500 Hazen units
		Odor	IS 3025 (Part-5) 1983, (RA 2006)/ APHA 2150-2012 (22 nd Edition)	Agreeble/Disagreeble
		Inorganic Solids	IS 3025 (Part-18) 1984, (RA 2006)	10 to 2000 mg/l
		Turbidity	IS 3025 (Part-10) 1984, (RA 2006)/ APHA 2130-B-2012 (22 nd Edition)	1 to 30 NTU
		pH Value	IS 3025 (Part-11) 1983, (RA 2006)	6.5 to 8.5
		Total Hardness	IS 3025 (Part-21) 2009/ APHA 2340-C-2012 (22 nd Edition)	10 to 800 mg/l
		Iron	IS 3025 (Part-53) 2003/ APHA 3500 Fe-B-2012 (22 nd Edition)	0.01 to 2 mg/l

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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
	Water (Drinking Water, Water for Food, Water for Ice, Mineral Water)	Chloride	IS 3025 (Part-32) 1988 (RA 2009)	10 to 1000 mg/l
		Sulphate	IS 3025 (Part-24) 1986, (RA 2009)	0.1 to 500 mg/l
		Total Dissolved Solids	IS 3025 (Part-16) 1984, (RA 2009)	10 to 2000 mg/l
		Calcium	IS 3025 (Part-40) 1991, (RA 2009)	10 to 500 mg/l
		Magnesium	IS 3025 (Part-46) 1994, (RA 2009)	10 to 200 mg/l
		Acidity/Alkalinity	IS 3025 (Part-22 & 23) 1986, (RA 2009)/ APHA 2310-A-2012, APHA 2310-B-2012 (22 nd Edition)	10 to 600 mg/l
		Fluoride	IS 3025 (Part-60) 2008/ APHA 4500-D-2012 (22 nd Edition)	0.02 to 20 mg/l
		Residual Free Chlorine	IS 3025 (Part-26) 1986, (RA 2009)/ APHA 4520-2012 (22 nd Edition)	0.01 to 10 mg/l
2.	Reagent Grade Water	Colour retention of KMnO ₄	IS 1070-1992	1 to 3600 Sec
		Specific Conductivity	IS 3025 (Part-14)-1984/ APHA 2510- 2012 (22 nd Edition)	0.1 to 25 micro mhos/cm
		pH Value	IS 3025 (Part-11) 1983, (RA 2006)	0.1 to 12
		Total Solids/ Non Volatile Residue	IS 3025 (Part-11) 1983, (RA 2006)	0 to 100 mg/l
		Silica	IS 3025 (Part-35)-1988, (RA 1999)/ APHA 1995-2012 (22 nd Edition)	0.01 to 10 mg/l

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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
3.	Battery Water	Non-Volatile Residue	IS 1069-1993	5 to 20 mg/l
		Chloride	IS 3025 (Part-32) 1988, (RA 2009)	10 to 1000 mg/l
		pH Value	IS 3025 (Part-11) 1983, (RA 2006)	0.1 to 12
		Total Hardness	IS 3025 (Part-21) 2009/ APHA 2340-C-2012 (22 nd Edition)	1 to 100 mg/l
		Iron	IS 3025 (Part-53) 2003/ APHA 3500 Fe-B-2012 (22 nd Edition)	0.01 to 5 mg/l
		Electrical Conductivity	IS 3025 (Part-14)-1984/ APHA 2510- 2012 (22 nd Edition)	1 to 100 µmhos/cm
		Total Dissolved Solids	IS 3025 (Part-16) 1984, (RA 2009)	5 to 100 mg/l
4.	Effluent Water, Waste Water	COD	IS 3025 (Part-58)-2006/ APHA 5220B 2012 (22 nd Edition)	5 to 10000 mg/l
		Dissolve Oxygen	IS 3025 (Part-38) 1989, (RA 2009)/ APHA 4500-C-2012 (22 nd Edition)	1 to 10 mg/l
		Oil and Grease	IS 3025 (Part-39) 1991, (RA 2009)/ APHA 5520-2012 (22 nd Edition)	1 to 5000 mg/l
		B O D	IS 3025 (Part-44) 1993, (RA 2009)/ APHA 5210-2012 (22 nd Edition)	5 to 10000 mg/l

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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
	Effluent Water, Waste Water	Total Dissolved Solids	IS 3025 (Part-16) 1984, (RA 2009)	10 to 20000 mg/l
		Total Suspended Solids	IS 3025(Part-15) 1984/ APHA 2540-2012 (22 nd Edition)	1 to 10000 mg/l
		Total Chromium	APHA 3500-Cr-B-2012 (22 nd Edition), IS 3025 (Part-52) 2003	0.01 to 500 mg/l
		T. Kjeldahl Ammonical Nitrogen	IS 3025 (Part-28)1986, (RA 2009)/ APHA 4500-B-2012, (22 nd Edition)	0.5 to 1000 mg/l
5.	Water for Construction	pH Value	IS 3025 (Part-11) 1983, (RA 2006)	2 to 12
		Inorganic Solids	IS 3025 (Part-18) 1984, (RA 2006)	10 to 5000 mg/l
		Organic Solids	IS 3025 (Part-18) 1984, (RA 2006)	10 to 500 mg/l
		Chloride	IS 3025 (Part-32) 1988, (RA 2009)	10 to 2000 mg/l
		Sulphate	IS 3025 (Part-24) 1986,(RA 2009)	5 to 500 mg/l
		Suspended Matter	IS 3025(Part-17) 1984, (RA 2009)	5 to 2000 mg/l
		Acidity & Alkalinity	IS 3025(Part-22) 1986, (RA 2009) & IS 3025(Part-) 1986, (RA 2009)	0.1 to 50 ml

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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
XI. BUILDING MATERIALS				
1.	Cement (OPC, PPC, PSC)	LOI	IS 4032-1985, (RA 2009)	0.1 to 20%
		Al ₂ O ₃	IS 4032-1985, (RA 2009)	0.2 to 20%
		SiO ₂	IS 4032-1985, (RA 2009)	1 to 50%
		Fe ₂ O ₃	IS 4032-1985, (RA 2009)	0.01 to 10%
		SO ₃	IS 4032-1985, (RA 2009)	0.01 to 10 %
		CaO	IS 4032-1985, (RA 2009)	0.2 to 70 %
		MgO	IS 4032-1985, (RA 2009)	0.1 to 10%
		Cl	IS 4032-1985, (RA 2009)	0.002 to 5 %
		IR	IS 4032-1985, (RA 2009)	0.1 to 40%
2.	Pozzolanic Materials (Fly ash, Micro silica)	LOI	IS 1727-1967	0.2 to 10 %
		SiO ₂	IS 1727-1967	1 to 50 %
		Al ₂ O ₃	IS 1727-1967	0.2 to 35 %
		Fe ₂ O ₃	IS 1727-1967	0.2 to 10 %
		SO ₃	IS 1727-1967	0.2 to 10 %
		Cl	IS 4032-1985, (RA 2009)	0.001 to 0.5 %
		CaO	IS 1727-1967	0.1 to 20 %
		MgO	IS 1727-1967	0.02 to 20 %

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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
3.	Concrete	Chlorides	IS 6925-1973, (RA 2008)	0.01 to 1.0 %
		Sulphates	IS 4032-1985, (RA 2009)	0.01 to 1.0 %
4.	Aggregates	Chlorides	IS 6925-1973, (RA 2008)	0.01 to 1.0 %
		Sulphates	IS 4032-1985, (RA 2009)	0.01 to 1.0 %
		Alkali Aggregate Reactivity	IS 2386 (Part-7) 1963, (RA 2007)	0.2 to 2500 mmol/l
5.	Admixture	Dry Material Content	IS 9103-1999, (RA 2008)	1 to 40 %
		Ash Content	IS 9103-1999, (RA 2008)	0.1 to 20 %
		pH	IS 9103-1999, (RA 2008)	2 to 12
		Relative Density	IS 9103-1999, (RA 2008)	1 to 2
		Chlorides	IS 6925-1973, (RA 2008)	0.002 to 5 %

XII. AIR, GASES & ATMOSPHERE

1.	Ambient Air Monitoring	PM2.5/PM10	CPCB guidelines for Ambient Air quality monitoring IS 5182 (Part-23) : 200 6 SOP No: CHE/13	0.5 to 1000 µg/m ³
		SPM	IS 5182 (Part-4) 1999, (RA 2005)	0.5 to 1000 µg/m ³
		SO ₂	IS 5182 (Part-2) 2001, (RA 2006)	0.4 to 1050 µg/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
	Ambient Air Monitoring	NO _x	IS 5182 (Part-6) 2006	2 to 1000 µg/m ³
		Chlorine	IS 5182 (Part-19) 1982, (RA 2009)	5 to 1000 µg/m ³
		Fluoride	IS 5182 (Part-13) 1991, (RA 2009)	0.5 to 1000 micro-gm/m ³
2.	Stack Emission Monitoring	PM	IS 11255 (Part-1) 1985, (RA 2009)	1 to 5000 mg/Nm ³
		NO _x	IS 11255 (Part-7) 2005, (RA 2009)	2 to 1000 mg/m ³
		SO ₂	IS 11255 (Part-2) 1985, (RA 2003)	3.4 to 80000 mg/m ³
		Fluoride	IS 11255(Part-5) 1990, (RA 2003)	0.5 to 10 mg/m ³
3.	Fugitive Emission Monitoring	SPM	IS 11255 (Part-1) 1985, (RA 2003)	1 to 5000 µg/m ³
		SO ₂	IS 11255 (Part-2) 1985, (RA 2003)	3.4 to 80000 µg/m ³
		NO _x	IS 11255 (Part-7) 2005, (RA 2009)	2 to 1000 µg/m ³
		Chlorine	IS 5182 (Part-19) 1982, (RA 2006)	5 to 1000 µg/m ³
		Fluoride	IS 11255 (Part-5) 1990, (RA 2003)	0.5 to 10 mg/m ³

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