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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
I. PLASTIC, RUBBER & LEATHER				
1.	**Raw rubber/ Ingredients/ Compound/ Products**	Mooney Viscosity	ASTM D-1646-07, IS 3660(13)/2013, ISO:289-1-2005	Up to 200 MU
		Mooney Scorch	IS 3660(Pt.7)-2013, ASTM D 1646-07	0.1-60 Minutes
		Vulcanisation Properties by Rheometer	ASTM D-2084-2011	Up to 200 dN.m
		Vulcanizing Properties by RPA a) Torque (max) b) Torque (min) c) Optimum Cure Time d) Scorch Time	ASTM D 5289 –07, ASTM D-6601-2008 ISO 6502/1999(E)	 Up to 200 dN.m Up to 200 dN.m Up to 3 hrs Up to 3 hrs
		2. Dynamic Properties (S', S", S*, G', G", G*, Tan δ) of Raw & Compounded Rubber using RPA) a) Temperature Sweep b) Strain sweep	ASTM D 5289 –07, ASTM D-6601-2008 ISO 6502/1999(E)	 40-230°C 0.05 - 90° Arc (subject to maximum shear rate of 30 sec^{-1})
		c) Frequency Sweep		0.1 – 2000 cpm (subject to maximum shear rate of 30 sec^{-1})

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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
	Raw rubber/ Ingredient/ Compound / Products	**Stress-strain properties** a) Tension Modulus 100%, 200% & 300%	ASTM D-412-06, BCS-174-92, IS 3400(Pt. I)-12, IS 1891(I)/1994	Up to 425 kg load
		b) Tensile strength	ASTM D 638-10, IS 13098-2012, IS 1891(I)/1994, IS 1370 1993, JIS K 6301-1995, IS 443/1975	Up to 425 kg load
		c) Elongation at break		Up to 1000%
		Quadruple Shear Test	ISO 1827-2007	Up to MPa 2.5×10^{-3} psi
		Hardness a) Shore A	ASTM D-2240-2010, IS 3400(XXIII)/2006, ISO 7619-1-2010	35 to 95 Shore A
		b) Shore D	ISO 7619-1-2010, ASTM D-2240-2010, IS 3400(XXIII)/2006	20 to 92 Shore D
		c) IRHD (N)	ASTM D-2240-2010, ASTM D 1415-2012 IS 3400(II)-2003, ISO 48-2010, BS-903 Part A26 -1995, UL 157 1976, IS 5382 1995, IS 10908/1991	35 to 95 IRHD
		d) IRHD (Micro)	ASTM D-2240-2010, ASTM D 1415-2012 IS 3400(II)-2003, ISO 48-2010, BS-903 Part A26 -1995, UL 157 1976, IS 5382 1995, IS 10908/1991	30 to 92 Micro IRHD

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	Raw Rubber/ Ingredient/ Compound/ Products	**Stress strain properties using video extensor meter**	ASTM D-412-06, ASTM D-638-2010, IS 3400(I)- 2012, ISO 527/1993	Upto 4.5 kN
		Compression set a. under constant strain b. under constant force	ASTM D-395-08 Method-B, ASTM D-395-08 Method-A, ASTM D 574-11, ASTM D 1056-07, ASTM D 1229-2003 (R-08), BS: 4443(P-1)-88, IS 3400 (Part X)-1977(R-2003,) BS-903 Part A6-1992, IS 1741 1960,UL 157-1996, ISO-4649-2006,ISO 815-1991	 Recovery Upto 100% Recovery Upto 100%
		Abrasion resistance ARI RVL	IS 3400 (Part-III)-87, (RA 2003) ASTM D-5963-2010, ISO 4649-2006, IS 1891/1994	 Upto 500 index Upto 200 mm3
		Dynamic mechanical properties using DMA Storage Modulus Loss Modulus Tan Delta Loss Angle Tg Values Youngs Modulus Shear Modulus	Visco-analyser user manual, Dynatest software ASTM D-5992-96(R-2001)-11 ASTM D-4065-1995	 Upto 100 Mpa Upto 40 Mpa Upto 2 Upto 40° -150 to + 450° C Upto 100 MPa Upto 100 Mpa

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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
	Raw Rubber/ Ingredient/ Compound/ Products	**Ozone Resistance Test**	ASTM D-1171-2007 (Method A & B) ASTM D-1149-07, ASTM D 3395-99 Method A (Specimen A & B) IS 3400(Pt.20)-94(R-99), IS 636-1988 ISO-1431-1-2012, ISO-1431-22012 ISO-7326,IS 9573-2012, IS 10908/1991 IS 14933-2001,UL 157-1976	Qualitative
		Density / Relative Density/Pour density/ Specific gravity	IS 7086-1973 (P-1)(06) , IS 3400(9)-1978(03) , ASTM D -297-1993(R-06), ASTM D 792-2013, ISO 2781-2008, IS 8391-1987	0.5 to 6.0
2.	**Rubber to Fabric composite product/ Radiator hose/ belt**	Adhesion of rubber to flexible support	ASTM D-413-07, IS 2765-1982,UL 157-1976, IS 1891 (Part I)-94(R-2005), IS 443/1975	Upto 425 kg load
		Adhesion of rubber to textile fabrics/Peel Strength	IS 3400(Pt.5)-86(R-03), ISO 8094-1994, CAN/CSA-M422-M 87, ISO:36-2011	Upto 425 kg load

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Rubber to Fabric composite product/ Radiator hose/ belt	Kink test for Hose	IS 636-88(2003)	Qualitative
		Expansibility Test	IS 2765-82(R-2005)	Upto 25%
		Test on a seam strip	IS 1370-93(R03)	Qualitative
		Crushing Test	IS 10908-91(R-2008)	Qualitative
		Drum Friction Test	IS 3181-1992(R-2007) , ASTM D 5963-2004(R-2010), CAN/CSA-M-422-M-87/1987	Upto 400°c
3.	**Rubber Composite Products such as Mounts /Bushes**	Adhesion of rubber to rigid support	ASTM D 429-08 Method A, B, D, E, IS 3400(V)-2003, UL 157/1976, IS 7016 (V)2003	Upto 425 kg load
4.	**Rubber Braided Wire Hose/ LPG Hose**	Hose cover abrasion loss in weight	BCS-174-1992, BS 5173 sec103.9	Upto 5 gm
		Proof pressure test of hose	IS 443-75(R-2006), BCS-174-92, EN 1360-1997, IS 443-75(2006), IS 10908-91(R-2008), ISO-1402-1996, IS 10773-83(R-2006),	Upto 1000 Kg/cm²
		Burst pressure of hose	IS 443-75(R-2006), BCS-174-92, EN 1360-1997, IS 443-75(2006), IS 10908-91(R-2008), ISO-1402-1996, IS 10773-83(R-2006) IS 446/87	Upto 1000 Kg/cm²

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Rubber Braided Wire Hose/ LPG Hose	Flexibility test for LPG Hose	IS 9573-12, IS 10908-91	Qualitative
		Resistance to Vacuum	IS 5797-94 (R-2003)	Qualitative
		Grip Strength	IS 9573-12, IS 10908/1991	Qualitative
5.	**Rubber cork sheet**	Resistance to Bending	IS 638-79(2003), IS 3735-96, IS 4253-2008	Qualitative
		Tensile Creep Test	IS 14635-99-(R-04)	Upto 500%
		Compressibility and Recovery Test	IS 2712-98(r-04), IS 4253 (P1,2)/1980(-04) UL 157-1976, IS 4253(Pt.1&2)-2008, ASTM F-36-2009, ASTM F-806-2009	Upto 99%
6.	**Polysulfide Rubber Sealant**	Adhesion & cohesion test	IS 12118 P I and II)-1987 (R-2007), BS 4254-1984,	Qualitative
		Adhesion and Tensile modulus	BS 5212 (P I and II)-1990,	
		a) Before Ageing	ASTM D 412 - 06	Upto 400 N
		b) After Ageing		Upto 400 N
		3) Adhesion in peel (R.T./Water Immersion/ 7days)		
		a. Sealant to cement		Upto 100 N
		b. Aluminium to sealant		Upto 100 N
		c .Glass-sealant		Upto 100 N

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Polysulfide Rubber Sealant	Rheological properties at the inclined position	IS 12118 P I and II)-1987 (R-2007), BS 4254-1984, BS 5212 (P I and II)-1990,	Qualitative
		Difference in depth of Sealant surface (R.T./24hrs/2.5% slope)	ASTM D 412 - 06	Upto +10 mm
7.	**Plastics/Ebonite**	Flexural Strength	ASTM D-790-2010,	Upto 1000 kg/ cm^2
		Izod/Charpy Impact test	ASTM-D-256-92-(R-2006) ISO-178-93(R-04)	Upto 25 J/mm
8.	**Rubber Sealing Rings for Gas Mains, Water Mains and Sewers**	Stretch Test	IS 5382-1985(R-03) with Amend. No.1 & 2.	Qualitative
9.	**Rubber Knees Boots/Rubber Product**	Leakage Test	IS 3738/2004, IS 9081/2011, IS 4148/1989 (R01)	Qualitative
10.	**Gaskets for Pressure Cookers**	**Autoclave ageing at 120°C/100kN/m^2 steam pressure/8hrs**	IS 7466-1994(2003), IS 3400 (II & IV)	
		a) Change in Tensile strength		Upto 5 kN & Upto 120°cC
		b) Change in Elongation at Break		
		c) Change in Hardness (points)		

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
11.	**Flexible rubber tubing for liquefied Petroleum Gas (First Revision)**	Crushing Test	IS 10908-1991(R-2003)	Qualitative
12.	**Rubber Hose for LPG**	Flexibility Test	IS 10908-1991(R-2003)	Qualitative
		Grip Strength Test	IS 9573/2012	Qualitative
13.	**Sealants**	**Application life :-** a) Difference in depth of the Sealant surface (5ºC/ 48 hrs)	BS-5212-1990, IS 12118 (Part 1 & 2) 1987, ISO 11600 2003	Upto ± 6 mm
		b) Time (min)		Min 30 mins
		Tack free conditions (R.T./16hrs.)		Qualitative
		The following test are conducted on assemblies after curing at RT / 7days	BS-5212-1990	
		Penetration and Recovery test	BS-5212-1990	
		i.) Penetration, (Before ageing)		Upto 10 mm
		ii.) Penetration, (After 70°C/ 14 days)		Upto 10 mm
		iii.) Penetration, fuel B RT, 48 hrs		Upto 10 mm

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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
	Sealants	iv) Recovery (before Ageing)	BS-5212-1990	Upto 100%
		v) Recovery (After 70°C/14 days)		Upto 100%
		vi) Recovery (After fuel B /RT/ 48 hrs)		Upto 100%
		vii) Mass loss(70°C/14 Days)		Upto 100%
		viii) Mass change (fuel "B"/RT/ 48 hrs)		Upto 100%
		ix) flame resistance test		Qualitative
		x) Cyclic test		Qualitative
		b) Resistance to Plastic flow		Upto 5.0 mm
		c) Elastic Recovery	ISO 11600, ISO 7389	Upto 100 %
		d) Tensile properties, secant tensile modulus at 23 Deg	ISO 11600, ISO 8339	Upto 8 N/mm^2
		e) Tensile properties at maintened extension	ISO 11600, ISO 8340	Qualitative
		f) Adhesion / Cohesion Properties at variable Temperature	ISO 11600, ISO 9047	Qualitative

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Sealants	g) Adhesion / Cohesion properties at maintained extension after water immersion	ISO 11600, ISO 10590	Qualitative
		h) Resistance to compression	ISO 11600, ISO 11432	Upto 8 N/mm^2
		i) Loss of mass	ISO 11600, ISO 10563	Upto 20%
		j) Resistance to flow	ISO 11600, ISO 7390	Upto 10 mm
14.	**Tyres**	**Motorcycles& three wheelers tyres** 1) Section Width 2) Outer Diameter	IS 15627:2005 Amed. 1 May 2011, ECE R75 Rev.1 1997, SNI-06-0101-2002	 600 mm/1 mm 2000 mm/1 mm
		Passenger cars 1) Section Width 2) Outer Diameter	IS 15633:2005 Amed.2 Apr.2011, ECE-R30 Rev.3- 2007, SNI-06-0098-2002	 600 mm/ 1 mm 2000 mm / 1 mm
		Bus / Truck tyres & Light CV tyres 1) Section Width 2) Outer Diameter	IS 15636:2012, ECE-R54 Rev 2- 2004, SNI-06-0099-2002 SNI-06-0100-2002	 600 mm / 1 mm 2000 mm/ 1 mm

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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
	Tyres	**Endurance test :** Motorcycles & three wheelers tyres	IS 15627:2005 Amed. 1 May 2011 SNI-06-0101-2002	PC-LT /Truck /RR Endurance test Machine Drum Dia. 1.7 m Speed: 350 km/h /1 km/h Load: 10000 kg /1 kg Pressure: 1000 kPa / 1kPa
		Endurance test: Passenger cars	IS 15633:2005 Amed.2 Apr.2011, SNI-06-0098-2002	PC-LT /Truck /RR Endurance test Machine Drum Dia. 1.7 m Speed: 350 km/h /1 km/h Load: 10000 kg /1 kg Pressure: 1000 kPa / 1kPa
		Endurance test: Bus / Truck tyres & Light CV tyres	IS 15636:2012, ECE-R54 Rev 2- 2004, SNI-06-0099-2002, SNI-06-0100-2002	PC-LT /Truck /RR Endurance test Machine Drum Dia. 1.7 m Speed: 350 km/h /1 km/h Load: 10000 kg /1 kg Pressure: 1000 kPa / 1kPa
		Load speed Test: Motorcycles& three wheelers tyres	IS 15627:2005 Amed. 1 May 2011 ECE R75 Rev.1 1997 SNI-06-0101-2002,	PC-LT /Truck /RR Endurance test Machine Drum Dia. 1.7 m Speed: 350 km/h /1 km/h Load: 10000 kg /1 kg Pressure: 1000 kPa / 1kPa

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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
	Tyres	**Load speed Test:** Passenger cars	IS 15633:2005 Amed.2 Apr.2011, ECE-R30 Rev.3 2007, SNI-06-0098-2002	PC-LT /Truck /RR Endurance test Machine Drum Dia. 1.7 m Speed: 350 km/h /1 km/h Load: 10000 kg /1 kg Pressure: 1000 kPa /1kPa
		Load Speed- Test: Bus / Truck tyres & Light CV tyres	IS 15636:2012, ECE-R54 Rev 2- 2004, SNI-06-0099-2002, SNI-06-0100-2002	PC-LT /Truck /RR Endurance test Machine Drum Dia. 1.7 m Speed: 350 km/h /1 km/h Load: 10000 kg /1 kg Pressure: 1000 kPa /1kPa
		Plunger Test: Motorcycles& three wheelers tyres	IS 15627:2005 Amed. 1 May 2011 SNI-06-0101-2002	Universal Test Machine Diameter: 500 mm/ 1 mm section Width: 600 mm /1 mm Pressure:1000 kpa /1 kPa Load: 10000 kg /1 kg Speed: 50 mm/min /1 mm/min Displacement: 1000 mm /1 mm

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	Tyres	**Plunger Test:** Passenger cars	IS 15633:2005 Amed.2 Apr.2011 SNI-06-0098-2002	Universal Test Machine Diameter: 1500 mm/ 1 mm section Width: 600 mm /1 mm Pressure: 1000 kpa /1 kPa Load: 10000 kg /1 kg Speed: 50 mm/min /1 mm/min Displacement: 1000 mm /1 mm
		Plunger Test: Bus / Truck tyres & Light CV tyres	IS 15636:2012 SNI-06-0099-2002, SNI-06-0100-2002	Universal Test Machine Diameter: 1500 mm/ 1 mm section Width: 600 mm /1 mm Pressure: 1000 kpa /1 kPa Load: 10000 kg /1 kg Speed: 50 mm/min /1 mm/min Displacement: 1000 mm /1 mm
		Dynamic growth Test for Motorcycle tyres	IS 15627:2005 Amed. 1 May 2011 ECE R75 Rev.1 1997	Tyre Profilometer Speed: 0 to 300 km/h/1 km/h Pressure: 1000 kPa /1 kPa Diameter: 1500 mm/ 1 mm section Width: 600 mm /1 mm

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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
	Tyres	Bead Unseating Resistance Test Tubeless passenger car Tyres	IS 15633:2005 Amed.2 Apr.2011, SNI-06-0101-2002	Universal Test Machine Diameter: 1500 mm/ 1 mm section Width: 600 mm /1 mm Pressure: 1000 kpa /1 kPa Load: 10000 kg /1 kg Speed: 50 mm/min /1 mm/min
		Rolling Resistance Test: Two wheeler, three wheeler, Passenger car & LCV tyres, Truck & bus tyres	ISO 28580:2009 ISO 18164:2005	RR Endurance test Machine Drum Dia. 1.7 m Speed: 350 km/h /1 km/h Load: 10000 kg /1 kg Pressure: 1000 kPa /1kPa Torque: 300 Nm/1 Nm
		Tread Wear Indicators for Motorcycles& three wheelers, Passenger cars & Light CV, Bus & Truck tyres	IS 15627:2005 Amed. 1 May 2011 IS 15633:2005 Amed.2 Apr.2011, IS15636:2012, SNI-06-0098-2002, SNI-06-0099-2002, SNI-06-0100-2002, SNI-06-0101-2002, ECE R75 Rev.1 1997, ECE-R54 Rev 2- 2004, ECE-R30 Rev.3- 2007	Depth Gauge 40 mm /0.01 mm

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15.	**Auto Tubes/ Rubber materials**	Air permeability by constant pressure method	IS 3400 (Pt.21)-80 (R-2003), IS 4355:1977, ISO:2782/2006	Upto 15x10-17 m2/Pas
		Leakage Test	IS-13098-2012	Qualitative
16.	**Automotive Vehicles-Tubes For Pneumatic Tyres**	Splice Flex Strength	CQAV:IND/VEH/2081/2006/A	Visual
		Pull out Strength	IS:9081/2011, IS-13098-2012	450 kg
17.	**Valves for pneumatic tyre**	Dimension and Design featurers	IS:9081-2011	
		Valve Designation		Visual
		Bendability valve stem		Visual
		Buffing		Visual
		Adhesion Test		Visual
		Valve core leakage		Visual
		Valve core interchangeability		Visual
		Valve core Marking		Visual
		Valve core workmanship		Visual
18.	**Automotive Vehicles-Tubes For Pneumatic Tyres**	form & Fit	IS:13098/2012	Upto 20 mm
		Thickness Uniformity		Visual
		Air Tightness		Visual
		Strength of splice		450 kg
		Set after ageing		Upto 100 %

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19.	**Raw Rubber/ Ingredients/ Compounds/ Rubber products including Automobile tubes**	Tensile Set	ASTM D 412 -06, UL157-1996, UL 260 /1996	Upto 100%
		Set after break	ASTM D 412-06	Upto 100%
		Indentation Hardness	IS 8391-1987, IS 7888/1975	Upto 450 kg
		Compression Set at low temperature	ISO-815-1991(E)	Upto 100%
		Electrical Resistance/Electrical Bonding/Electrical Continuity	IS 2494(Part-2) 1993 IS 5894/2005,IS 10733-1983, IS 9573/12, IS 3181-1992, SANS 971:2003 BCS-174-1992, ISO 8031 /1993	Qualitative
		Volume Resistivity Surface Resistivity	IS 3400(XV)/1971(2003) IS 3396/1979 (R 2001)	Upto Ohms 1×10^{15}
20.	**Rubber to Fabric/ Composite products/ Radiator Hose/ Belts**	Adhesion between Lining to reinforcement, between components Adhesion between reinforcement to outer cover	UL 157/1996, IS 3181-1992 IS 1891(I)/1994	Up to 40 kg/cm
		Full thickness Elongation at Break Full thickness Breaking Strength Elongation at Reference load Designation & marking	IS 1891/1994, UL157/1996	Upto 500%, Up to 5000 kg
		Breaking Load	IS 1969/1968	

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21.	**Rubber Composite Products such as Mounts /Bushes**	**Rubber to metal bonded Items Peel strength** Load deflection test Compression Modulus Uniaxiat Tension Uniaxial Compression Planner shear test Dynamic stiffness by servo hydraulic Natural frequency	IS 3400(V)-2003,UL 157/1996, ASTM D 429(08) Method A,B,D, IS 7016(V)/2003 ASTM D 575/12 Method A&B BS 903 Part 12/1975	Upto 425 kg load
22.	**Rubber Braided Wire Hose for Mining / LPG Tubes, Air Hoses**	Abrasion Resistance	BCS-174-1992, BS 5173 Sec103.9/1996	Upto 5 gm
		Mass of Hose	IS 10733/1983	450 kg
		Elongation under working pressure and permanent elongation of hose	IS 10733-1983	Upto 750 kg/cm²
		Change in Dimension at proof pressure.	IS 443-75(R-2006)	
		Minimum Bend radius	IS 12656-1989	
		Minimum breaking pressure.	IS 444/1987	
		Heat Resistance	IS 636/1988	
		Increase in OD @working pressure	IS 443-75(2006)	

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	Rubber Braided Wire Hose for Mining / LPG Tubes, Air Hoses	**Hydrostatic Test**		
		Hydrostatic Burst pressure	BCS-174-92,EN 1360/1997	Upto 750 kg/cm²
		Hydrostatic proof pressure	IS 443/1975(2006)	
		Change in dia @ proof pressure	IS 10908-91(R-2008), ISO:1402/1996	Upto 200 mm
23.	**Rubber Sealing Rings For gas mains, water mains and Sewer**	Finish	IS 5382-1985(R-03) with amendment No 1&2	Qualitative
24.	**Rubber Products Including Endless V Belt, Conveyor Belt, Hose, LPG Tube, Hand gloves, Coir Sheet, Seals , Molded Solid Rubber, Soles & Heels, Sealing Rings, Insulating Mats**	Dimensions(ID, OD, bore size, length, (Liner, Cover & Wall thickness), Dimension & Tolerance etc	IS 2494(Pt1)-94, IS 2712-98, IS 636-88, IS 9573-12, IS 638-79, IS 4253(Pt1)-08, IS 444-87, IS 10733-83, IS 1370-1993, IS 2396-88, IS 5894-05, IS 10908-91, IS 2765-82, IS 14151(Pt2)-08 IS 8189-96, IS 9573-12, IS 446-87, IS 10655-99, BCS-174-92, ISO 1307-06, IS 4148-1989, IS 443/1975, IS 444-1987(03), IS 447-1988 (R-98), IS 937, ISO 4671-07, IS 8391-1987, IS 5676-1995, IS 5382-1985, IS 3549-1983, IS 2396-1988, IS 1370-1993, IS 9081-2011 IS 4770-1991, IS 15652-2006 , IS 15466-2004, IS 1891(I)/1994	Upto 250 mm

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25.	**Rubber Products/ Rubber Composite**	Tensile strength	ASTM D-412-06,UL157/1976 IS 2494(Pt1)-94(99), IS 1891-94 BS-903 A2/1994, ISO-37/2005	Upto 8500 kg
		Load deflection test Compression Modulus Uni-axial Tension Uni-axial Compression Planer Shear Test	ASTM-D-575-12 Method A,B,UL157-1976	Upto 5000 kg
		Tension set	IS 3400-(Pt.13)-83 BS 903 A-5/1974, ISO 2285-2007, IS 4148-1989 UL157/1976	Upto 100 %
		Accelerated Air Ageing change in tensile strength, elongation @ break(%) hardness (points	IS 3400(Pt.4)-12 ASTM D 573-10 , BS-903 A19-1975, IS 1741/1960, IS 4355 1977, IS 5382 1985, ISO-188-2011, IS 10908/1991 UL157/1976, IS 1891(I)/1994	Upto 450 kg
		Accelerated Oil ageing Aging in Liquid media, Acid and Alkali change in tensile strength elongation @ break(%) hardness (points)	ASTM D 471-12 BS 903 A-19:1975 , IS 3400 Part 6-2012, IS 8391/1987, IS 15652/2006 UL157/1976	Upto 450 kg

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Rubber Products/ Rubber Composites	Oxygen Ageing Change in tensile strength Change in elongation at break Change in hardness	IS 3400(IV) -2012 ASTM D 572/10 IS 10810(XVI)/1996, UL 157/1976	Upto 450 kg
		Gamma Radiation /UV Radiation Change in tensile strength Change in elongation at break Change in hardness	ASTM D 1672-66, (RA 1971)	Upto 450 kg
		Tear resistance Angular tear Trouser tear Crescent Tear Nicked Tab End	IS 7016(Pt.3)-82(2003) IS;1891/1994, IS 3181/1992 IS 3400(Pt.17)-74(2003) IS 3400(XII) ISO 34-1-2010, ISO 36/2005 ASTM D-624-12 Die A,B,C & T	Upto 450 kg
		Resistance to cut growth & Cut Initiation by Ross Flexing machine	ASTM D-1052-05 IS 3400(Pt.XVI)-74(2012) IS 6383-89 ASTM D-430-89	Qualitative
		De-Mattia Flexing Cut growth Cut Initiation	ASTM D-813-2000 IS 3400(Pt.VIII)-83(2001) , IS 1741 1960	Upto 500 kcs Qualitative
		Taber Abrasion Test	ASTM D 3389-2010, ISO 5470-1:1999, ISO 9352-2012	Upto 100 g

Laboratory	**Indian Rubber Manufacturers Research Association, Plot No.-254/ 1 B, Road No. 16V, Wagle Industrial Estate, Thane, Maharashtra**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Mechanical Testing**	**Issue Date**	**23.06.2014**
Certificate Number	**T-1154**	**Valid Until**	**22.06.2016**
Last Amended on	**-**	**Page**	**21 of 21**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Rubber Products/ Rubber Composites	Heat Ageing in Autoclave	IS 4148-1989	Upto 450 kg
		Resilience Test	BS 903(Part-A8) Method A	Upto 100%
		Workmanship and Construction./Marking, Construction requirement for Lining, Reinforcement &Cover, Coil diameter, Visible Imperfection, End connection. Construction of hose having rough or smooth bore	IS 638 1979, IS 5676 1995 , IS 13098-2012, SANS 971:2003, IS 5382-1985, IS 5894-2005, IS 12585-1988, IS 10733-1988, IS 9573-12, IS 446-87, IS 10908/1991, IS 7466-1994, IS 444-1987, IS 636-1988, IS 4148-89, IS 3549-1983, UL157/1976, IS 1891(I)/1994	Visual observation
		Resistance to bending, Test on seam strip	IS 638/1979, IS 1370/1993 IS 1891-1994	Visual observation
		Cold Resistance (Increase in hardness)	IS 5382/1985,UL157/1976	Upto 90 IRHD
		H V Testing, Proof Voltage, Break down voltage, Dielectric strength, Leakage Current, Insulation resistance with water Tracking & Errosion Test	IS 4770-1991, IS 15652-2006 IS 2584/1963(R-2006) IS 8264/1976	Upto 60 kV
		Troughability Test	IS 1891(I)/1994, SANS 971:2003	Upto 1.0
		Puncture Resistance	IS 4770 1991	Upto 5 kV

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Ruchi Guntuku
Accreditation Officer-I

Manoj Kumar Tiwari
Technical Manager