

Test Facilities at OFB

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Sl.No	Test/Calibration Facility	Test / Specifications	Material to be tested
1.	Ballistic Test	Ballistic Testing (with 7.62mm& 5.56mm ammunition with various distances/ranges)	Armour Steel Plate/Aluminium/Bullet proof Canvas Cloth/ Bullet proof Glass
2.	X-Ray Machine, Magnetic Particle Inspection Machine, Dye Chemicals	Radiographic Test/ Magnetic Particle inspection/ Dye Penetrate Test	Aluminum Casting of Non-Radiographic Quality/ Ferro Alloy Item/ Ferrous, Non-Ferrous & Ceramics
3.	Optical Emission Spectrometer	Chemical Analysis (as per ASTM E 415a-2014/IS 8811 : 1998, ASTM E 1086-2014/IS 9879 : 1998, ASTM E 1086-2014)	Carbon Steel & Low AlloySteel/ Austenitic Stainless Steel/ Tool Steel/Aluminium Alloys
4.	LECO C&S Determinator	Chemical Analysis (as per ASTM E 1019-2011)	Carbon Steel & Low AlloySteel, Austenitic StainlessSteel, Tool Steel/ Cast Iron
5.	Wet Analysis	Chemical Analysis (as per IS 288-1987/1989, IS 1559 : 1961, IS 504 : 1963, ASTM E 1251 : 2011,	Carbon Steel & Low AlloySteel/ Austenitic Stainless Steel/ Ferro Silicon/ Ferro Manganese/ Ferro Chromium/ Cu Alloys/ Aluminium Alloys
6.	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Steel, Aluminium, Copper

7.	Hardness Testing Machine	Hardness (Vickers/Rockwell/ Brinell/ Micro Hardness) (as per IS 1501 : 2002/IS 1586 : 2000/ IS 1500 : 2005/ ASTM E 384-2011)	Metals
8.	Impact Testing Machine	Impact Load (Izod 'V' Notch/ Charpy 'V' Notch) (as per IS 1598 : 1977/ IS 1757 : 1988)	Metal
9.	Universal Testing Machine	Tension and Compression (as per IS 7906 : 2004)	Springs
10.	Flattening Testing Machine	Flattening Test (as per IS 2328 : 1983)	Pipes
11.	Bend Testing Machine	Bending (as per IS 1599 : 1985)	Ferrous /Non-Ferrous
12.	Salt Spray Chamber	Coating Weight/ Corrosive Residue	Paints
13.	Salt Spray Chamber	Corrosive Testing	Paints
14.	Calibration Facility	Vernier Caliper/Micrometer/Depth Micrometer/Vernier Height Gauge/Level Protector/ Feeler Gauge/ Bore Gauge/ (as per IS:3651/ IS:2967/ IS:2699/ IS:2921/ IS:5812/ IS:3179)	-----

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Hot & Cold Chambers	Chamber Work Space/Size : 95 cm X 110cm X 95cm Capacity : 1000 liters Testing Range : -40°C & +180°C	-----
2	Hot & Cold Chambers	Chamber Work Space/Size : 3000 mm X 2000mm X 2000mm Capacity : 12000 liters Testing Range : -50°C & +120°C	-----
3	Thermal Shock Chambers	Chamber Work Space/Size : 1000 mm X 1000mm X 1000mm Capacity : 1000 litres Testing Range :Humidity - 30% to 98%	-----

		Temperature : +20 ⁰ C to +60 ⁰ C	
4	Vibration Testing Machine	Maximum load capacity = 280 Kg at 5 'g'	-----
5	Vertical Impact Testing Machine	Maximum load capacity = 250 Kg at 150 'g'	-----
6	3-D Impact Testing Machine	Maximum load capacity = 150 Kg at 100 'g'	-----
7	Optical bench	Resolving Power,Focal Length (100 mm to 1000 mm)	Optical instrument, lens, & prism
8	Theodolite	Angle Measurement (1 to 360 ⁰)	-----
9	Collimeter	Light Transmission(4000 nm to 7000 nm)	mirror, glass plate, optical devices, lens, prism
10	Diopter Lens Set	Measurement of Diopter(+/- 0.5 Diopter to +/- 5 Diopter)	Lens

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Hardness Testing Machine	Hardness (Rockwell/ Vickers)	Ferrous & Non Ferrous
2	Water Proofness Testing Machine	Bundsman Water Repellency Tester & Hydrostatic Pressure Head Tester	-----
3	Refractive Index Testing Machine	Up to 1.75	Glass
4	Environmental Chamber for Heat, Cold, Humidity**	Heat Chamber – up to 100 ⁰ C Cold Chamber – up to -60 ⁰ C Humidity - RH 95% (at 25 ⁰ C to 50 ⁰ C)	-----
5	Strain Viewer for Glass	Size : 400X500 (max)	Glass
6	Bump, Vibration Testing Machine**	Bump – 50 g (max) Vibration – 50 g (max)	-----
7	Profile Projector	Bed Size for Job – 250 mm (max) Weight of Job – 2Kg (max) Angle range – 0-360 ⁰	-----

** Subject to availability of spare capacity

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	ONH Analyzer	ONH content of 1gm sample in the range of 0.05 PPM to 50000 PPM with the precision of 0.025 PPM	-----
2	Optical Emission Spectrometer	Chemical Analysis (as per ASTM E-415/ ASTM E-1086/ BS-EN-15079-2007	Carbon Steel/ Low Alloy Steel/ Stainless Steel/ Copper
3	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Ferrous and Non Ferrous Materials
4	Hardness Testing Machine	Hardness (Vickers) (as per IS 1501-2002)	Ferrous and Non Ferrous Materials
5	Impact Load Testing Machine	Impact Strength (as per IS-1598-1977)	Ferrous and Non Ferrous Materials

Ordnance Parachute Factory, Kanpur

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Reciprocating Movement Tester for Zip	Reciprocating Movement Test (as per IS:1481 (Part-2):2002)	Plastic slide fasteners
2	Demattia flexing Tester	Resistance to Damage by Flexing (as per IS:7016 (Pt-4)-1987)	Fabric Nylon PU coated
3	Crease recovery Tester	Crease Recovery Test (as per IS:4681-1981)	1. Cloth Plain weave Dope Dyed DD OG 2. Cloth Plain weave Dope Dyed DD Sky Blue
4	Light Fastness Tester**	Colour Fastness to Light (as per IS:2454)	Fabrics
5	Perspirometer**	Colour Fastness to sea water (as per IS:690)	Fabrics
6	Chemicals**	Colour Fastness to organic solvent (as per IS:688)	Fabrics

**** Subject to availability of spare capacity**

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Wet Analysis **	Chemical Analysis	Carbon Steel & Low Alloy Steel/ Ferritic, Matenstic & Stainless Steel
2	Optical Emission Spectrometer **	Chemical Analysis	Carbon Steel & Low Alloy Steel/High Speed Fettitic & Matenstic Steel
3	Chrome Plating**	Analysis of Chrome Plating Solution	Hexavalent, Trivalent, Total Sulphate, Total Oxide, Iron Oxide
4	Testing Apparatus for determination of Ingredients**	Determination of Ingredients	phosphating solution.
5	Hardness Tester**	Hardness (Micro Vickers, range 5gm to 2000gm)/ Rockwell, HRA & HRC/ Brinell, range 3000Kg.	Ferrous & Non Ferrous
6	Impact Testing Machine**	Impact Load (Izod – 0-170 Jule & Charpy- 0-300 Jule)	Ferrous and Non Ferrous Materials
7	Thickness Tester**	Chromium Plating Thickness Tester	Barrel Bore
8	Crack Detection **	Magnetic particle inspection	
9	Spring Load Testing Facility**	Load Testing Spring	Spring

** Subject to availability of spare capacity

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Optical Emission Spectrometer**	Chemical Analysis (as per IS 8811: 1988 , IS 9879	Iron Base Alloy
2	Fracture Toughness Testing Machine **	Fracture Toughness Test (as per ASTM E 399)	Gun Barrel/ High Strength Alloy

			Steel Material
3	Impact Testing Machine**	Impact Load (Izod-V) (as per IS 4163 & IS:1598/ ASTME 381)	Metals and Alloys
4	Hardness Testing Machine**	Hardness (Vickers/ Brinell/ Charpy U & V) (as per IS 1501/ IS: 1500 / IS: 1499 & IS:1757)	Metals and Alloys
5	Universal Testing Machine**	Ultimate Tensile Strength (as per IS-1608)	Ferrous and Non Ferrous Materials

** Subject to availability of spare capacity

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	pH Meter**	pH Value (as per IS:1390-1983)	Aqueous Extract
2	Digital Wash**	Colour Fastness to Washing (as per IS/ISO 105-C 10:2006)	Fabric / Netting / Tapes / Sewing Thread/ Plastic Slide Fastener
3	Chemical Analyzer**	Chemical Analysis as per IS: 199-1989 & IS: 4655-1968	Textile Items
4	Cone Test Apparatus	Cone Test –Proofing content of Canvas and Duck (as per IS 6803:1972)	Coated Fabrics
5	Soxhlet Apparatus**	Determination of Water Soluble Matter (as per IS:3456)	Fabric
6	Chemical Analyzer**	Chemical Analysis Determination of Bound Organic/ Volatile Matter/ Chromic Oxide/ pH/ water soluble Matter/ Total Ash etc. as per IS: 582-1970	Leather
7	Indentation Hardness**	As per IS:1741-1960	Ferrous materials
8	Cone Test Apparatus**	Cone Test (as per IS:7941-1976)	Fabric
9	Universal Testing Machine**	Apparent Density/ Tensile Strength & Elongation% as per IS: 5914-1970	Ferrous materials
10	GSM cutter**	Mass per Unit Length and Mass per Unit Area (as per IS 1964:2001/ IS: 7016-1982)	Fabric / Tapes / Cordages/ Sewing Thread/PSF/ Netting.
11	Breaking Strength Testing Machine**	Breaking Strength (as per IS:1969-1985)	Textile Materials (Fabrics)
12	Tearing strength tester**	Tear Strength of Coated and Treated Fabrics (as per IS 7016:1981)	Coated & Treated Fabrics
13	Chemical Analyzer**	Composition (Protein Fibre) (as per	Yarn/ Fabric

		IS:2006)	
14	Crock Meter**	Colour Fastness to Rubbing(as per IS:766)	Yarn/ Fabric
15	Perspirometer**	Chemical Analysis (Colour Fastness to Perspiration) (as per IS 971:1983)	Fabric / Tapes/ Thread/PSF/Cordages
16	Light Fastness Tester**	Colour Fastness to Light (as per IS:2454 / ISO:105-A02)	Yarn/ Fabric
17	Water Spray Test Equipment **	Water Repellency of Fibre as per IS:390-1975	Fabric
18	Chemical Analyzer**	Binary mixture of polyester fibre with cotton& Regenerated Cellulose (as per IS:3416 – 1988)	Fabric
19	Chemical Analyzer**	Composition Binary mixture of Nylon-6 or Nylon-6.6 Fibres& certain other Fibres (as per IS:2005-1988)	Yarn/ Fabric
20	Microscope**	Identification of Textile Fibre (as per IS:667)	Yarn/ Fabric
21	Tensile Testing Machine**	Breaking Strength of Single Strand (as per IS 1670:1991)	Cordages/ Sewing Thread

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Laundro Meter	Chemical Analysis (Colour Fastness to Washing with Soap or Soap and Soda / Colour Fastness to Sea Water/ Colour Fastness to Organic Solvents/ Colour Fastness to Rubbing)(as perIS/ISO 105 (Part- C10 : 2006)/ IS 690:1988/	Fabric / Tapes / Cordages/ Sewing Thread/PSF/ Netting/
2	Perspiro Meter	Chemical Analysis (Colour Fastness to Perspiration/ Fabrics (Other than Wool) – Dimensional Changes on Soaking in Water/ pH Value of Aqueous Extracts) (as per IS 971:1983	Fabric / Tapes/ Thread/PSF/Cordages
3	Soxhlet Apparatus	Chemical Analysis(Scouring Loss in Grey and Finished Cotton Textile Materials) (as per IS 1383:1977)	Fabric / Tapes
4	Thread Counter	Threads per Unit Length (as per IS 1963:004)	Sewing Thread/Cordage
5	GSM Cutter	Mass per Unit Length and Mass per Unit Area (as perIS 1964:2001)	Fabric / Tapes / Cordages/ Sewing

			Thread/PSF/ Netting.
6	Tensile Testing Machine	Tensile Properties of fabrics - Maximum force and elongation at maximum force (as per IS 1969:2009)	Fabric / Tapes / Cordages/ Sewing Thread/PSF/ Netting
7	Tensile Testing Machine	Yarn - Breaking Strength and Elongation at Break of Single Strand (as per IS 1670:1991)	Cordages/ Sewing Thread
8	Breaking Strength Testing Machine	Breaking Load of Braided Nylon cords for aerospace purposes (as per IS 4227:1998)	Cordages/ Sewing Thread
9	Breaking Strength Testing Machine	Breaking Strength of Coated and Treated Fabrics (as per IS 7016:1981)	Coated Fabrics
10	Breaking Strength Testing Machine	Breaking Load of Tyre yarns, cords and tyre cord warp sheets made from man-made fibers (as per S 4910: 1989)	Cordages/ Sewing Thread
11	Tearing Strength Tester	Tear Strength of Coated and Treated Fabrics (as per IS 7016:1981)	Coated Fabrics
12	Tearing Strength Tester	Tear Strength by the Falling Pendulum Method (as per IS 6489: 2011)	Fabrics
13	Crease Recovery Tester	Recovery from creasing of textile fabrics by measuring the angle of recovery(as per IS 4681:1981)	Fabrics
14	Bursting Strength Tester	Bursting Strength of Fabrics - Diaphragm Method (as per IS 1966:1975)	Corrugated Boxes/ Netting
15	Cone Test Apparatus	Cone Test - Special Proofed Canvas and Duck/ Pressure Head Test - Special Proofed Canvas and Duck (as per IS 6803:1972)	Coated Fabrics
16	Bursting Strength Tester	Bursting Strength (Cardboard, Craft paper, Netting Mosq) (as per IS1060:1966)	Fabrics
17	Proof Load in Triangular 'D' Ring	JSS:1670-03:2005	Metallic Ring
18	Melting Point Tester	Melting Point of Yarn test (as per IS:5762)	Fabrics
19	Single Thread Breaking Strength Machine	Single Thread Breaking Strength Test (as per IS:4910, 1670)	Thread
20	Stiffness Test Machine	Stiffness (Drop angle) of Tape Nylon URV-WR Tested Black (as per ADRDE/SPECN/70(a)	Tape/ Nylon
21	Water absorption Tester	Water absorption test as per IS:4006	Corrugated fiber board boxes
22	Static Pressure Head Test Apparatus	Pressure Head Test (15 cm water column) 20cm Dome Dia.) for WP/WR fabrics & Polythene Bags/films (as per IS:6803)	Polythene Bags/Films
23	Hot Air Oven	Moister Regain (Cloth Cee Heavy) as per IS:9113	Cloth Hessian
24	Tensile Testing Machine	Tensile Strength (Paper packing water proof) as per IS:1060	Paper Packing
25	Air Permeability Tester	Air Permeability in Fabrics for Parachute (as per IS:11056-1984)	Parachute Fabrics

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Chemical Analyzer**	Composition (Protein Fibre) (as per IS:2006)	Yarn/ Fabric
2	Chemical Analyzer**	Composition of polyester+ Cellulose (as per IS:3416)	Yarn/ Fabric
3	Chemical Analyzer**	Composition Binary mixture of Nylon (as per IS:2005)	Yarn/ Fabric
4	Chemical Analyzer**	Composition Binary mixture of Acrylic (as per IS:3421)	Yarn/ Fabric
5	Microscope**	Fibre Identification (as per IS:667)	Yarn/ Fabric
6	Digital Wash**	Colour Fastness to Washing (as per IS/ISO 105-C 10:2006)	Yarn/ Fabric
7	Dry Wash**	Colour Fastness to Dry Washing (as per IS:4802)	Yarn/ Fabric
8	Perspirometer**	Colour Fastness to Perspiration (as per IS:971)	Yarn/ Fabric
9	Light Fastness Tester**	Colour Fastness to Light (as per IS:2454 / ISO:105-A02)	Yarn/ Fabric
10	Crock Meter**	Colour Fastness to Rubbing(as per IS:766)	Yarn/ Fabric
11	Hot Pressing**	Colour Fastness to Hot Pressing (as per IS:689)	Yarn/ Fabric
12	pH Meter**	pH Value (as per IS:1390)	Yarn/ Fabric
13	Soxhlet Apparatus**	% Scouring Loss (as per IS:1383& IS:2360)	Yarn/ Fabric
14	Water Repellency**	Spray Rating as per IS:390	Fabric
15	Soxhlet Apparatus**	Water Soluble Matter (as per IS:3456)	Fabric
16	Chemical Analyzer**	Bonding Agent %, As per TSRDE/70/54	Fabric
17	Levelling Test Equipment**	As per IND/TC/0048 ©	Fabric
18	Water Bath**	Hydro Test (as per Appendix `C` of IND/TC/0048©)	Fabric
19	Water Bath**	Chlorite Test as per Appendix `D` of IND/TC/0048©)	Fabric
20	Hot Air Oven**	Heat Shrinkage (as per IS:11248)	Fabric

21	Shrinkage Tray**	Relaxation Shrinkage (as per IS:2977& IS:665)	Fabric
22	Magnifier Glass/ Counting Glass**	Ends & Picks /cm , Mass/Unit Area& Breaking Load(Raveled Strip method) (as per IS:1963, IS:1964)	Fabric
23	Demattia flexing Tester**	Mass/Sq Meter (as per IS:7016 (Pt-4)	Fabric
24	Linier Density Measuring Apparatus**	Linier Density as per IS:681	Yarn
25	Breaking Load Tester**	Breaking Load (as per IS:1969)	Fabric
26	Bursting Strength Tester **	Bursting Strength as per IS:1966	Fabric
27	Shrinkage Tray**	Relaxation Shrinkage (as per IS:2977)	Fabric
28	Equipment for Testing of Turns/dm**	As per IS:832-1985	Yarn
29	De mattia flexing Tester**	Resistance to Damage by Flexing (as per IS:7016 (Pt-4)-1987)	Fabric
30	Thickness Tester**	Thickness under pressure of 0.7 & 7.0 gm/sq cm, as per IS:7702	Batting Polyester
31	Equipment for Testing of Resistance to Blocking **	As per TSRDE/70/54	Batting Polyester
32	Equipment for Testing of inter locking of Tex. Chain to Lateral Load**	As per IS: 14181 (Pt-2) Append. B	Garniture
33	Equipment for Testing of Top Stop**	As per IS:14181	Garniture
34	Equipment for Testing of Bottom Stop**	As per IS:14181	Garniture
35	Equipment for Testing of Puller & Slider**	As per IS:14181	Garniture
36	Equipment for Testing of Slider to Lock Holding**	As per IS:14181	Garniture
37	Equipment for Testing of Fastner**	As per IS:14181	Garniture

** Subject to availability of spare capacity

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1	Optical Emission Spectrometer	Chemical Analysis (as per IS8811-1998, IS 9879-1998, IS 15338-2003, IS-228, IS1559-1961, IS 12308, IS 1493-2006, IS 1760-2006, IS-2411)	Ferrous & Non-Ferrous/ Iron Ore/ Lime Stone/ Magnesite Brick/ Cement/ Flourspar

2	Radiography	Gamma Ray Cobalt T-60 Radiography (as per IS 2595-2008)	Steel Casting
3	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Steel & Cast Iron
4	Hardness Testing Machine	Hardness (Charpy, U Notch, V Notch) (as per IS 1499-1977, IS:1757-1977)	Steel
5	Impact Testing Machine	Impact (Izod) (as per IS:1598-1977)	Steel
6	Hardness Testing Machine	Hardness (Brinell/ Rockwell/ Vickers) (as per IS: 1586-Part-I-2013/ IS: 1586 PartI-2012/ IS:1501-Part-I-2013)	Steel & Cast Iron
7	Tensometer	Tension Test (as per IS:1608-2005)	Steel & Cast Iron
8	Bend Testing Machine	Bending (as per IS: 1599-2012)	Steel
9	Microscope	Micro (Grain size Estimation) (as per IS 12015-1991/ IS 4748-2009/ IS 4163-2004/ IS 7754-1975)	Steel/Cast Iron

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Electromagnetic Crack Detector	Detector Crack, job holding capacity: Length 1200 mm Dia 100mm	Ferrous
2	Salt Spray Chamber	Capacity 1 meter length and weight 15 kg.	-----
3	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (load range 100 KN Round specimen 5-20mm Dia Flat specification 0-20 thick)	Steel & Cast Iron
4	Hardness Testing Machine	Hardness (Vickers/ Brinell/ Rockwell)	Steel
5	Impact Testing Machine	Impact load, (Max. impact energy 300J Size of specimen-10x10x55mm	Steel
6	Climate Chamber (Hot & Cold)	Size- 1500mm (L)x 1000mm(W)x 1000mm(H), Temp.-70° C-80° C	-----
7	Non-Contact Microscope	Capacity : Weight 20Kg, Measuring Range-200x200x200mm	Ferrous & Non-Ferrous

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Optical Emission Spectrometer	Chemical Analysis (as per ASTM E 1251- 11)	Aluminum & Aluminum Base Alloys
2	X-Ray 320 KV**	Detection of Internal flaws	Steel
3	Coating Thickness Meter**	Coating Thickness	Zn Coating, Anodising
4	Ultrasonic Flaw detector**	Ultrasonic Test	-----

** Subject to availability of spare capacity

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Hot Air Oven, Chemical Analyser	Volatile Matter %, Red Oxide of Iron %, Drying Time in minutes. (as per JSS – 8030 – 14 – 2009)	APC No.2 (RD – 1192K)
2	Muffle Furnace, Softening Point Apparatus	Ash %, Softening Point °C, (as per JSS – 8030 – 28 – 2003)	APC No. 101 (RD 1061)
3	Softening Point Apparatus	Softening Point °C (as per JSS – 8030 – 25 – 2009)	APC No. 102 (RD 1064)
4	Hot Air Oven, Muffle Furnace	Non Volatile Matter %, Ash % (as per JSS – 8010 – 63 – 2004)	APC No. 224/ APC No. 225
5	Hot Air Oven, Muffle Furnace, Chemical Analyser	Moisture %, Loss on Ignition %, Matter Insoluble in Acid %, Carbon Tetrachloride Soluble matter %, Chlorides as 'NaCl' % (as per IND / ME / 236 : 2003)	Talc Powder

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Sl. No	Test/Calibration Facility	Test /Calibration/ Specifications	Material to be tested
1	Optical Emission Spectrometer	Chemical Analysis (as per ASTM E 415 – 2008, ASTM E 1086 - 2008 ASTM E 1999 – 2011&WI/MTL/DR-05, ASTM E 1251 - 2011	Ferrous& Non-ferrous
2	Universal Testing Machine/ Tensometer	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Ferrous & Non-ferrous
3	Hardness Testing Machine	Hardness (Vickers) (as per IS 1501-2013 (pt-1)	Ferrous & Non-ferrous
4	Bend Testing Machine	Bending (as per IS 1599 – 2012, IS 1403-1993)	Non-Ferrous
5	Stereo Microscope	Macroscopic Examination (as per IS 12573 – 1988&ASTM E 112 – 2012)	Non-Ferrous
6	Metallurgical Microscope	Microscopic Examination(Grain size Estimation) (as per IS 4748-2009)	Ferrous
7	Salt spray Apparatus	Apparatus Corrosion Resistance	Ferrous
8	Cobb Tester	Water absorption	Corrugated boxes
9	Ultrasonic Flaw Detector	Ultrasonic Test (upto 5 meters length)	-----
10	Wet Analyser	Chemical Analysis As per IS:288-2004/ IS 3685-2006/ IS: 1305-2000/ IS 249-1997	Ferrous Alloy/ Non-Ferrous Alloy/ Graphite / Sodium Bicarbonate
11	Brusting Strength Tester	Bursting Strength Test (as per IS 1060-1997)	Corrugated Boxes
12	Slip Gauges & Instruments	Calibration of Gauges	-----
13	Plug Gauges	Calibration of Chamber Gages	-----
14	Slip Gauges	Calibration of Instruments	-----
15	Dial Testing Machine	Calibration of Dial gauge	-----
16	Shadow Graph Machine	Checking of Form	-----
17	Floating Micrometer	Checking of Screws	-----
18	Instruments & Profile projectors	Dimensional inspection of dies/punches and profiles of threads	-----

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Optical Emission Spectrometer	Chemical Analysis (as per IS:8811:1998 ASTM E415-08, IS:9879:1998 ASTM E 1086-08, ASTM 12151-2007)	Ferrous Alloy Stainless Steel Copper Base Alloy Aluminum Base Alloy
2	Tensile Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Ferrous/Non-Ferrous Material
3	Hardness Testing Machine	Hardness (Rockwell/ Brinell/ Vickers) (as per IS IS:1586-2000/ IS:1500-2005/ IS:1502-2002)	Ferrous/Non-Ferrous Material
4	Profile Projector**	Inspection of any profile of internal and external (magnification Min-10 times and Max 50 times, Accuracy 0.01)	-----
5	Floating Bench Micrometer**	Inspection of Screw plug gauge and plain plug gauge (Range 0 to 100 mm, Accuracy-0.0002)	-----

** Subject to availability of spare capacity

Ordnance Factory Varangaon

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Apparatus of Chemical Tests	(As per IND/ME/960:2014)	Primer
2	Apparatus of Chemical Tests	(As per IND/ME/1020 (PROV):2014)	Igniter Composition ME 508/ Sub-Igniter Composition ME 508
3	Apparatus of Chemical Tests	As per IND/ME/749, IND/ME/750/ IND/ME/751	ME-407 for 7.62 mm / ME-408 igniter for 7.62 mm/ ME-409 sub-igniter for 7.62mm

4	Chemical Analyzer **	Strength of A&B (as per IS:266-1993)	Concentrate Sulphuric Acid Technical A&B
5	Chemical Analyzer**	Chemical analysis as per JSS-6810-104-2005/ JSS-6810-80-2003/ JSS-6810-59:2001)	Sodium Nitrite/ Lead Nitrite/ Berium Nitrite Grade-I

** Subject to availability of spare capacity

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Hardness Tester**	Hardness of Rubber as per IND/ME/584(f)	Rubber
2	Air Aging Tester**	Rubber as per IND/ME/584(f)	Rubber
3	Various Chemical Apparatus **	Viscosity/ Pressure/ Resistance to corrosion & humidity/ Dying Time (as per IS: 101)	Paint
4	Scratch Hardness Tester**	Scratch Hardness Test as per IS: 101	Paint
5	Flexibility & Adhesion Tester**	As per IS: 101	Paint

** Subject to availability of spare capacity

Ordnance Factory Bhandara

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Equipment/Apparatus for Stability Test **	JSS-1376-11:2008 (for Single Base) (Heat Test, B&J, MVT, Heating Test, TVM, DT, Hanzen)	Single Base & Double Base Propellants
2	Chemical Analyser**		
3	Equipment/Apparatus for checking of Physical Parameters**	JSS-1376-12:2013 (for Double Base)	
4	Calorimetric Apparatus**	JSG:0116:1996	

5	Closed Vessel Testing of Propellants for RF & RV**		
6	Apparatus of Chemical Tests**	As per JSS-1376-10:2010 IND/ME/604(f), IND/ME/816(a), IND/ME/841(a), IND/ME/814 & JSS-1376-06:2005	Explosives (RDX, RDX Compound, PETN, NC, NG, NC-NG Paste etc)
7	Apparatus/Equipment for Chemical Tests **	JSS-8305-14-2009	Bleached cotton linter
8	Apparatus/ Equipment for Chemical Tests **	IND-ME-799-(A)	Pentaerythritol
9	Apparatus/ Equipment for Chemical Tests **	JSS-9810-39-2013	Hexamine
10	Apparatus/ Equipment for Chemical Tests **	IS-3366-1973	Ether Solvent
11	Apparatus/ Equipment for Chemical Tests **	IS-264-2005	Nitric Acid
12	Apparatus/ Equipment for Chemical Tests **	IS-266-1993	Sulphuric Acid
13	Apparatus/ Equipment for Chemical Tests **	JSS-9810-111-2007	Litharge
14	Apparatus/ Equipment for Chemical Tests **	CS-2163	Tin Powder
15	Apparatus/ Equipment for Chemical Tests **	Pascal-F	Calcium Carbonate
16	Apparatus/ Equipment for Chemical Tests **	JSS-6810-145-2013	Basic Lead Stearate
17	Apparatus/ Equipment for Chemical Tests **	IS-251-1998	Soda Ash
18	Apparatus/ Equipment for Chemical Tests **	JSS-6810-81-	Carbon Black
19	Apparatus/ Equipment for Chemical Tests **	JSS-9620-01-2010	Graphite Sulphur Free
20	Apparatus/ Equipment for Chemical Tests **	JSS-6810-110-2011	Potassium Sulphate
21	Apparatus/ Equipment for Chemical Tests **	IS-301-1982	Potassium Nitrate
		JSS-1375-04-2012	Nitroglycerine
22	Apparatus/ Equipment for Chemical Tests **	JSS-6810-109-2013	Glycerine for Nitration
23	Apparatus/ Equipment for Chemical Tests **	IS-323-1959	Rectified Sprit
24	Apparatus/ Equipment for Chemical Tests **	IS-9591-1996	Esters (DAP, DBP, DEP, DOA)
25	Apparatus/ Equipment for Chemical Tests **	IS-1504-1996	Bees Wax
26	Apparatus/ Equipment for Chemical Tests **	IS-534-1992	Benzene
27	Apparatus/ Equipment for Chemical Tests **	JSS-9310-06-2002	Paper white fine Ammunition
28	Apparatus/ Equipment for Chemical Tests **	JSS-1222-1968	Paper & Board Corrugated Ammunition
29	Apparatus/ Equipment for Chemical Tests **	JSS-1370-03-2002	Alluminium Powder Heavy Gr-I

30	Apparatus/ Equipment for Chemical Tests **	JSS-9310-01-2007	Mill Board
31	Apparatus/ Equipment for Chemical Tests **	JSS-8135-17-2002	Paper Craft Ammunition
32	Apparatus/ Equipment for Chemical Tests **	JSS-9160-08-2010	Candlella Wax
33	Apparatus/ Equipment for Chemical Tests **	IND/ME/800	Cotton Yarn NE 30/2, Cotton Yarn 2/2, Cotton Cambric
34	Apparatus/ Equipment for Chemical Tests **	IS:5088-1982	Bag Cotton TNT
35	Apparatus/ Equipment for Chemical Tests **	IND/ME/221	Cloth Viscose
36	Apparatus/ Equipment for Chemical Tests **	IS 3255-1979	Tape cotton Red/White
37	Apparatus/ Equipment for Chemical Tests **	JSS 8310-02-1994	Tape cotton Sewing Unproofed
38	Apparatus/ Equipment for Chemical Tests **	IS 13262-1992	Tape Pressure Sensitive with Plastic Base
39	Apparatus/ Equipment for Chemical Tests **	IND/ME/973	Cloth Acrylic Rayon Gr. A & B
40	Apparatus/ Equipment for Chemical Tests **	JSS 8135-05-1994	Paper Wrapping Waxed Craft
41	Apparatus/ Equipment for Chemical Tests **	IS 1397-1990	Cartridhing Paper
42	Apparatus/ Equipment for Chemical Tests **	IS 1540	Quick Lime
43	Apparatus/ Equipment for Chemical Tests **	IS 170:2004	Acetone
44	Apparatus/ Equipment for Chemical Tests **	IS-5430-1981	Rubber Latex
45	Apparatus/ Equipment for Chemical Tests **	IS-70-1980	Cuprous Oxide
46	X-Ray Testing**	HEMRL/SRP/PS/272, IS:2595:1978	Propellant for Konkur Booster, Propellant for 68mm, Propellant for Pechora, Propellant for RGB-60, Propellant for RGB-12, Propellant for PZM, Propellant for SSEC, Propellant for BPC-4W-20, Propellant for EDB, Propellant for Mohini, Propellant for Helina, Propellant for 140mm Ninad, Propellant for 84mm, Propellant for PTA, Propellant for CLMC, Propellant for LRCR, Propellant for MRRCR, Propellant for N-33 & N-44

** Subject to availability of spare capacity

Ammunition Factory Khadki, Pune

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	BOD Incubator, Oritop IS6, weighing balance	pH/Total Suspended Solids/BOD/Dissolved Oxygen/ Oil & Grease/ Chromium Hexavalent/ Copper Zinc/ Lead (as per APHA & AWWA and WEF 22 nd Edition 2012)	Wastage Water/ Sewage Water
2	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Volatile Mater/Barium Chromate/Antimony Sulphide/ Potassium/ Perchlorate/ Nitro Cellulose (as per IND/ME/820 (a) 2008 DC 3893-ME)	Explosive/ Delay Composition ME-412(M)
3	Melting Point Apparatus	Melting Point (Range: 0-200 deg C)	
4	Melt Flow Index Apparatus	Melting Flow Index	Plastic
5	Cobbs Test Apparatus	Absorption of Water	Paper Board Carton
6	Tear Resistance Tester	Tearing Force	Paper, Board, Plastic Films
7	Electronic Universal Testing Machine	Tensile Strength	Metals
8	Ford cups super fit B4 & B5	Efflux time	
9	Bursting Strength Tester	Bursting strength	Paper, Board, Plastic Films
10	Izod / Charpy Impact Tester	Izod impact strength	Plastics
11	Paint Corrosion Oven	Corrosion test	Paints
12	Heat Deflection tester	Softening point of a particular plastic material at a specified temp when 1 mm of penetration takes place of an indenter carrying load of 1 kg	Plastics
13	Moisture Vapour Permeability apparatus	Water absorption	Tape Adhesives
14	Water bath thermostatic	Boiling extraction and evaporation	
15	Digital Flame Photometer	Determination of sodium, potassium, calcium elements	
16	Lead fuze Rolling Equipment	Determination of Burning time	Gun Powders.

17	Puffing time & Temp. Equipment	Determination of Puffing time and temperature	Cellulose Nitrate sheet.
18	Bomb Calorimeter & Vacuum Attachment	Determination of Calorific Value	propellant
19	Flash Point Apparatus	Flash Point	Propellant
20	pH , TDS & Conductivity Meter	For pH,TDS& Conductivity	Effluent Water
21	U.V Visible Spectrophotometer	for Estimation of Metals	Effluent Water
22	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Volatile Mater/Barium Chromate/Antimony Sulphide/ Potassium/ Perchlorate (as per IND/ME/795(a) DC 3896-ME)	Explosive/ Composition (S-I)
23	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Volatile Mater/ Lead Dioxide/ Alloy Aluminium / Magnesium (as per IND/ME/1003 (Prov) DC 3892-ME)	Explosive/ Smoke Composition (R 636),
24	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Volatile Mater/ APC/NC Parts above 100 (as per IND/ME/950(prov) DC 3892-ME)	Explosive/ Priming Composition Cu-1,
25	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Volatile Mater/ Nitro Cellulose/ Potasium/ Red Lead/ Barium Chromate/ Zirconium+ Antimony Sulphide (as per IND/ME/990(PROV) DC 3894-ME)	Explosive/ Composition Booster 50:50,
26	Puncture Resistance Taster	Resistance Offered	Paper Board Carton
27	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Volatile Matter /Polymerised Linseed Oil or Glue 'XY' /Magnesium Powder /Strontium Nitrate/Strontium Peroxide/Barium Peroxide/Charcoal Impurities As BaSO4/Shellac (as per IND/ME/526 (b)DC 3891-ME/IND/ME/525(c) July'97DC 3832-ME)	Explosive COMPOSITION(TYPE B)S.R. No. 368/ (TYPE A)S.R. 126
28	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Volatile Matter/Boron/Barium Peroxide/Magnesium Powder (as per IND/ME/1028 (Prov)DC 3900-ME)	IGNITER COMPOSITION FFV – 840/ TRACER COMPOSITION FFV 840
29	Tensometer in 8 different scales	Tensile Strength & Elongation	Metals
30	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Moisture content Chlorides As Potassium Chloride/ Sulphates As Potassium Sulphate /Acidity Calculated As Sulphuric/Acid Mass of residue on flashing (as per JSS 1376-05 : 2005 Rev. No. 2 DC 3935-ME)	GUN POWDER
31	Dessicator, Glassware, Oven & vacuum pump for gravimetric analysis	Volatile Matter /Aluminium Powder/ Potassium Per Chlorate/Nitro Cellulose Content (as per ERDL/PYRO/PS/177 (Prov)	COMPOSITION ME – 446

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Sl. No	Testing / Calibration Facility	Test / Specifications	Material to be tested
1	Illumination Calorimeter C-3300**	Full screen 70mm dia L - 1333 cd/meter square	
2	Bump Test ** Model DBTM - 1510	04 Input channels 1 to 100 pc/g for Igniter bumb	
3	Environmental Test Chamber** Hot & Cold Chamber Make - Classic	Hot upto 70 degree celcius Cold upto - 50 degree celcius	-----
4	Dead Weight Pressure Gauge Tester **	for checking of pressure gaugesL.P. - 1 to 65 kg/cm squareH.P. - 60 to 700 kg/cm squareAccuracy - + 0.1%	gauges
5	Dead Weight Vacuum Gauge Tester **	for checking of Vacuum gauges.- 50 to -710 mmHgAccuracy +0.1%	gauges
6	Mass Standard & Balance of Appropriate accuracy **	for calibration of weight boxup to 200gm (F2 class)1 mg to 200 gmF1 class	----
7	Analytical Weighing Balance**	Standard steel weightsfor calibration of Analytical Weighing Balance1 mg to 200 gmF1 class	-----
8	Various Apparatus for chemical analysis**	IS 1420-1989	Magnesium Carbonate Light
9		IS-5671 1984	Strontium Nitrate
10		IS: 2307- 2004	Magnesium Powder
11		IS:708:1987	Potassium Chlorate
12		IND/ME/794(b)	Barium Chromate
13		JSS 6810-59-2010	Barium Nitrate
14		JSS 6810-82:2011	Zinc Oxide
15		JSS 6820-02:2012	Dye Oil Orange
16		JSS 6810-99-2011	Hexachloroethane Powder
17		JSS: 8010-63:2012	APC No.224
18		JSS: 8010-63:2012	APC No.225
19		JSS: 8010-63:2012	APC No.226
20	Vibration Testing Machine ** (Electro Dynamic Vibration System	Upto synchronised channels frequency range1 Hz to 5000 HzFor random & size	—

** Subject to availability of spare capacity

High Explosives Factory, Pune

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Apparatus for Chemical Analysis**	Chemical Analysis (as per JSS 6810-127-199	4:6 Dinitro Resorcinol
2	Apparatus for Chemical Analysis**	(for manufacturing Explosive) as per IS-170-2004	Acetone
3	Apparatus for Chemical Analysis**	Chemical Analysis as per IS 2697:1976	Ammonium Bicarbonate
4	Apparatus for Chemical Analysis**	Chemical Analysis as per JSS 8010-48-1986	Apc No. 219
5	Apparatus for Chemical Analysis**	Chemical Analysis as per JSS 6810-59	Barium Nitrate
6	Apparatus for Chemical Analysis**	Chemical Analysis as per JSS 1375-01-2012	CE Crystalline Dense/ CE Dry Dust/ CE Dry Gran 14/100, CE Dry Gran 36/100, CE Dry Gran 18/100,
7	Apparatus for Chemical Analysis**	Chemical Analysis as per IND/ME/74 & IND/ME/738 (a)	CE Primer
8	Apparatus for Chemical Analysis**	Chemical Analysis as per JSS 1376-05-2005	Gun Powder
9	Apparatus for Chemical Analysis**	Chemical Analysis as per IS 1612:1976	Iron Powder
10	Apparatus for Chemical Analysis**	Chemical Analysis as per JSS 1376-09-2007	Lead Azide
11	Apparatus for Chemical Analysis**	Chemical Analysis as per IS 1089-1986	Oleum
12	Apparatus for Chemical Analysis**	Chemical Analysis as per JSS 6810-79-2003	Sodium Azide

** Subject to availability of spare capacity

Ordnance Factory Katni

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Optical Emission Spectrometer	Chemical Analysis (as perASTME-1251-1999)	Non-ferrous Copper based alloy Zinc based alloy & pure zinc Aluminum& its alloys Lead & its alloys
2	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005IS 1599-1985, IS 2328-2005,IS 1501: 2002)	Non-Ferrous Material
3	Metallographic testing Machine	Macro etch test for Cu & its alloys Micro structural analysis Cu & its alloys Grain size determination of Cu & its alloys by comparison method (as per IS 13484-1992, IS 7739 -1975, IS 4748-1988, (RA 2003)	Non-Ferrous Material
4	Non Destructive Testing Machine	Radiographic test (as per IS 2595-1978)	Non-Ferrous Material
5	Inverted Metallurgical Microscope	Grain Size measurement	Cu Alloys

Ordnance Factory Itarsi

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Chemical Analyzer	Strength % min. Free SO ₃ % min. (as per IS:1089-1986)	Oleum for the mfr. of mixed acid for NG
2	Chemical Analyzer	Strength of A&B (as per IS:266- 1993)	Concentrate Sulphuric Acid Technical A&B
3	Chemical Analyzer	Weak Nitric Acid (as per IS:264- 1976)	Strength % as HNO ₃
4	Chemical Analyzer	Residual Sulphuric Acid (as per IS:266-1993)	Strength % as H ₂ SO ₄

5	Chemical Analyzer	Strong Nitric Acid Technical grade A,B & C (as per IS:264-1976)	Strength as Nitric Acid % Nitrous content %
6	Chemical Analyzer**	Chemical analysis as per JSS-6810-95-2007/ JSS-6810-110-2011/ IS-229-1993/IS 301-1982/JSS-9620-01-2001	Guanidine Nitrate/ Potassium Sulphate/ Ethyl Acetate/Potassium Nitrate/Graphite

** Subject to availability of spare capacity

Ordnance Factory Khamaria, Jabalpur

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Tensile Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Ferrous & Non Ferrous Material
2	Fisher Sub-Sieve Sizer/ Partials Size Analyzer	Particles Size of various chemicals in powder Form (as per IS:7602-1975)	-----
3	Shore A & D Hardness Tester	Rubber & Plastic Testing (as Per IND/ME/844)	Rubber/Plastic Materials
4	Hardness Testing Machine	Hardness (Vickers/ Brinell / Rockwell) (as per IS410-1977/ Gost10230-75)	Ferrous & Non Ferrous Material
5	Chemical Analyser	Chemical Analysis	Various explosives & Pyrotechnics

Grey Iron Foundry, Jabalpur

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Testing Apparatus for determination of ingredients	Determination of ingredients	Bituminous coal, bentonite, refractory material, dextrin, sodium silicate, phosphating solution.

2	Metallurgical Microscope	Metallographic structure	Ferrous
3	Universal Testing Machine	Tensile Strength	Ferrous
4	Wet Analyzer	Chemical Analysis (as per IS: 228:1987 RA 1997)	Ferrous
5	Spectrometric Analyzer	(as per IS 15338 : 2003)	Ferrous
6	Testing Apparatus for testing of Paints	Testing of Paints	Paints

Gun Carriage Factory, Jabalpur

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Ferrous & Non-Ferrous
2	Hardness Testing Machine	Hardness (Brinell/Vickers) (as per IS 1500-2005 / IS 1500-2005)	Ferrous & Non-Ferrous metals
3	Impact Testing Machine	Impact Strength (Izod & Charpy 'V' Notch) (as per IS: 1598-99&IS: 1757-1988)	Ferrous & Non-Ferrous metals
4	Breaking Strength Testing Machine	Breaking Strength (as per IS:1969-85)	Textile Materials (Fabrics)
5	Ultrasonic Flaw Detector	Ultrasonic detection of Internal Flaws, Surface & Sub-Surface Flaws (as per IS: 8791-78/ IS: 3664-81/ IS: 4225-04/ IS: 9565-95/ IS: 12666-1998/ IS: 4904-90)	Metallic Material Component & Forgings
6	Wet Analyzer	Chemical Analysis (as per IS: 228:1987 RA 1997) IS: 1559-1961 RA 1997 ASTM-E 107 ASTM-E 75 / IS: 3685-1966 (RA 1996) IS: 4027 (Pt-5) 1991 IS: 3685-1966 (RA 1996) IS: 504-1963 (RA-1996)	Iron Steel & Ferrous Alloys/ Copper & Its Alloys/ Aluminum & its Alloys
7	Optical Emission Spectrometer	Chemical Analysis (as per IS 8811: 1988(RA 2012) / ASTM-E-1507-98/ IS: 7658-75)	Ferrous & Its Alloys/ Copper & Its Alloys/ Aluminum & Its Alloys

Vehicle Factory, Jabalpur

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Sl. No	Test /CalibrationFacility	Test / Specifications	Material to be tested
1	Universal Testing Machine**	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Ferrous & Non-Ferrous
2	Hardness Testing Machine**	Hardness (Rockwell/ Brinell/Vickers) (as per IS 1586/ IS 1500/ IS 1501)	Ferrous & Non-Ferrous metals
3	Impact Testing Machine**	Impact Strength (Izod & Charpy ‘V’ Notch) (as per IS: 1598-99&IS: 1757-1988)	Ferrous & Non-Ferrous metals
4	Compression and Tension Testing Machine**	(Load Vs. Deflection Test)Compression Springs/Extension Springs (as per IS–7906, IS–7907	Compression and Tension Testing Machine
5	Metallurgical Microscope**	Estimation of Grain size by comparison Method (as per IS: 4748 & IS 4163)	Steel sample
6	Case Depth Measuring Machine**	Case Depth Measurement (as per IS 6416)	Ferrous & Al. Alloys
7	Tensile Testing Machine for Rubber**	Rubber Tensile Strength as Per IS 3400	Rubber
8	Density Tester for Rubber**	Rubber Density (as per IS 3400)	Rubber
9	Accelerated Ageing Tester for Rubber**	as per IS 3400	Rubber
10	Determination of affect of liquid for Rubber**	as per IS 3400	Rubber
11	Wet Analyser**	Chemical Analysis As per IS:288 /	Steel Products
12	Optical Emission Spectrometer**	Chemical Analysis (as per IS 8811/ IS 2599/ IS 12308/ ASTM E-1251/ ASTM-E-1507	Case Iron Products/ Cu-Base Alloy/ Al- Base alloy /Zn-Base Alloy/ Fe-Base Alloy
13	Calibration Facility**	Calipers /External Micrometer/Gear Teeth/Plunger type Dial/Plain Gap Gauge/ Plain Gauge/ Thread Plug Gauge/ (as per IS:3651/ IS:2967/ IS:2092/ IS:3455/ IS:7876/ IS:3455/ IS: 7859/ IS:4218/ IS:2334)	-----

** Subject to availability of spare capacity

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Sl. No.	Test Facility	Test / Specifications	Material to be tested
1	Compression and Tension Testing Machine	(Load Vs. Deflection Test)Compression Springs/Extension Springs (as per IS-7906 (Part-8) : 1989, IS-7906 (Part - 5) : 2004/ IS-7907 (Part-II) : 1976, IS-7907 (Part-I) : 2004)	Low Alloy Steels
2	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Ferrous & Non-Ferrous metals & Alloys
3	Hardness Testing Machine	Hardness Test- Brinell/Rockwell/Micro-Vicker (as per IS – 1500 (Part-1) : 2013)/ IS:1586(Part-1) : 2012/IS:1501(Part-1) : 2013).	Ferrous & Non-Ferrous metals & Alloys
4	Case Depth Measuring Machine	Case Depth Measurement (as per IS - 6416 – 1988)	Ferrous & Al. Alloys
5	Metallurgical Microscope	General Microstructure/Macrostructure Analysis (as per IS-11371:1985(Steels) /IS-12573 :2010(Aluminium))	Ferrous & Al. Alloys
6	Impact Testing Machine	Impact Strength Test (Charpy) (as per IS – 1499:1977)	Low Alloy Steels
7	Shore Hardness Tester	Rubber Hardness	Rubber
8	Tensile Testing Machine for Rubber	Rubber Tensile Strength Ultimate Tensile Strength/ % of Elongation / % of Reduction of C/S(as per IS-3400 pt-1-2012)	Rubber
9	Density Tester for Rubber	Rubber Density (as per IS 3400pt.-9-2003)	Rubber

Heavy Alloy Penetrator Project, Tiruchirappalli

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Atomic Absorption Spectrophotometer	Chemical Analysis	Tungstenpowder/ Nickel Powder/ Molybdenum Powder/ Ironpowder/

			Cobalt Powder/ TungstenblendedPowder/ Steel Alloys
2	Tensile Testing Machine**	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Steel product & Aluminium product
3	Hardness Testing Machine**	Hardness (Brinell, Rockwell 'C' Scale & Charpy 'V' Notch) (as per IS 1500:2005 / IS 1586:2000&IS 1757:1988)	Steel Product
4	Fisher Sub-Steve Sizer**	Testing of average particle size of elemental powder/ blender powder/ granules (0.2 to 20 Micron /Porosity: 0.4 to 0.8)	----
5	Scanning Electron Microscope**	Metallurgical application Magnification: 10X	-----

** Subject to availability of spare capacity

Ordnance Factory Tiruchirappalli

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Optical Emission Spectrometer	Chemical Analysis (as per IS 8811:1998 / IS 9879:1998)	Low Alloy Steel & Plain Carbon Steel/ Stainless Steel
2	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Ferrous & Non Ferrous
3	Hardness Testing Machine	Hardness (Brinell) (as per IS 1500 Pt 1 2013)	Ferrous & Non Ferrous
4	Impact Testing Machine	Impact Load (Izod) (as per IS 1598-1977)	Ferrous & Non Ferrous

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	pH Meter	pH Value (as per IS:1390-1983)	Fabrics / Tapes / Cordages
2	Digital Wash	Colour Fastness to Washing (as per IS/ISO 105-C 10:2006)	Fabric / Netting / Tapes / Sewing Thread/ Plastic Slide Fastener
3	Perspirometer	Colour Fastness to Perspiration (as per IS:971- 1983)	Fabric
4	Crock Meter	Colour Fastness to Rubbing(as per IS:766-1988)	Fabric
5	Soxhlet Apparatus	Water Soluble (%) (as per IS:3456 – 1966)	Fabric
6	Cone Test Apparatus	Cone Test (as per IS:7941-1976)	Fabric
7	Chemical Analyzer	Blend Composition% Binary mixture of polyester fibre with cotton (as per IS:3416 – 1988&IS:2006-1988)	Fabric
8	Hot Air Oven	Heat Shrinkage (as per IS:11248-1995)	Fabric
9	Water Bath	Hydro Test (as per Appendix `C` of IND/TC/0048©)	Fabric
10	Water Bath	Chlorite Test (as per IS:987-1958)	Fabric
11	Shrinkage Template & Water Try	Shrinkage % After Soaking in Soap Soda Solution (as per App `A` of IND/TC/2089)	Coated Fabrics
12	Curing Test Apparatus	Curing Test (as per IS:8543)	Buttons
13	Hot Air Oven	Shrinkage Test (%) (as per IS: 11248:1995)	Fused Collars & Shoulder Straps
14	Soxhlet Apparatus	Scouring Loss % (as per IS:1383)	Fabric
15	Microscope	Fibre Identification (as per IS:667-1981)	Sewing Threads / Cordages
16	Magnifier Glass/ Counting Glass	Ends & Picks /cm , Mass/Unit Area& Breaking Load(Raveled Strip method) (as per IS:1963-2004, IS:1964-2006&IS:1969-1 : 2009)	Fabric/Tape
17	Shrinkage Tray	Relaxation Shrinkage (as per IS:2977)	
18	Precision Balance 0.1-300g	Mass/Square Meter	Coated Fabric
19	Digital Screw Gauge	Diameter / Overall thickness (as per IS:1461 – 1984)	Buttons

20	Digital Screw Gauge	Thickness, Mass/unit area&Flap bend test (as per IS:1060-1966, Clause 14.2 of CQA(GS)/US/460)	Packing Boxes
21	Tensile Testing Machine (Single Yarn)	Shearing Strength (as per IS:8156 -1994)	Fastener Hook & Loop
22	Drape Meter	Drape Co-efficient (as per IS : 8357)	Fabric
23	Bursting Strength Tester	Bursting Strength of Packing Box (as per IS:2771)	Packing Box
24	Zip Tester	Reciprocating for zipper (as per IS:14181)	Zip
25	Soxhlet Apparatus	Water Soluble Matter, Scouring Loss (as per IS:3456 & IS:1383)	Fabric

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Sl. No	Test Facility	Test / Specifications	Material to be tested
16	Rubber Polymer Identifier	Rubber Polymer Identification (As per ASTM –E 334/D3677)	Rubber
17	Flattening Testing Machine	IS-2328	Pipes
18	Erickson Cupping Test Machine	Erickson Cupping Test for Sheets (As per IS: 10175-pt-1)	
19	Eddy Current Sorter	As per equipment manual (HVF A 149)	-----
1	Hardness Testing Machine	Hardness (Brinell/ Rockwell/Vickers/ Charpy U & V) (as per IS 1500/ IS: 1586/IS: 1501/ IS: 1499 & IS:1757)	Metals andAlloys
2	Universal Testing Machine	Ultimate Tensile Strength (as per IS-1608)	Ferrous and Non Ferrous Materials
3	Bend Testing Machine	Bending (as per IS 1599)	Ferrous /Non-Ferrous
4	Compression and Tension Testing Machine	(Load Vs. Deflection Test)Compression Springs/Extension Springs (as per IS–7906 / IS–7906	Low Alloy Steels
5	Tensile Testing Machine for Rubber	Rubber Tensile Strength Ultimate Tensile Strength/ % of Elongation / % of Reduction of C/S(as per IS-3400)	Rubber
6	Density Tester for Rubber	Rubber Density (as per IS 3400)	Rubber
7	Rubber Hardness Shore A(T)	Rubber Hardness test (as per IS:3400)	Rubber
8	Rubber Accelerated Aging Test (T)	Rubber Accelerated Aging Test (as per IS: 3400 pt. 4-2012)	Rubber

9	Metallurgical Microscope	Microscopic Examination(Grain size Estimation) (as per IS 4748-1988)	Ferrous
10	Micro Etching Test	As per IS 11371/ IS 13484 (upto Magnification 10 X for Fe)	
11	Microstructure of Metal	As per ASTM E 3-01 / ASTM E- 407-2007/ ASTM A 247-2010/ IS: 7754-75 (Magnification 75x to 1000X)	Cast Iron
12	Metallurgical Microscope	Non Metallic Inclusion Rating (NMIR) (as per IS: 4163:2004)	Steel sample
13	Case Depth Measuring Machine	Case Depth Measurement (as per IS - 6416 – 1988)(Magnification 20x to 100x, case depth from 0.02mm to 3.6mm)	Ferrous & Al. Alloys
14	Metallurgical Microscope	ASTM E 1077-01/ IS 6396-200/ ISO 3887 Magnification 20x to 100X (DC later from 0.02mm to 108mm)	Ferrous
15	Optical Emission Spectrometer	Chemical Analysis (as per ASTM E 415/ IS 8811 : 1998, ASTM 1251-2011/ IS 9879 : 1998, ASTM E 1086-2008/ TPM/3.2/ E-2 SM 5-17)	Carbon Steel & Low AlloySteel/ Austenitic Stainless Steel/ Tool Steel/Aluminium Alloys/Copper
20	Torsion Spring Tester**	As per product Drawing	-----

** Subject to availability of spare capacity

Cordite Factory, Aruvankadu

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Equipments/Apparatus for Chemical Tests **	JSS 6810:109:2007	Glycerine for Nitration
2	Equipments/Apparatus for Chemical Tests **	JSS 6810:110:2011	Pottassium Sulphate Gr.I & II
3	Equipments/Apparatus for Chemical Tests **	JSS 6810:125:2008	Carbamite
4	Equipments/Apparatus for Chemical Tests **	JSS 6810:129:2000	Diphenyl Amine
5	Equipments/Apparatus for Chemical Tests **	JSS 8030:09:2010	Mineral Jelly
6	Equipments/Apparatus for Chemical Tests **	JSS 8135:05:2006	Paper Kraft Ammunition
7	Equipments/Apparatus for Chemical Tests **	JSS 8135:017:2002	Paper Kraft Ammunition (RA 2010)
8	Equipments/Apparatus for	JSS 8305:014:2009	Bleached Cotton Linter

	Chemical Tests **		
9	Equipments/Apparatus for Chemical Tests **	JSS 8310:2:2007	Thread Cotton Seving
10	Equipments/Apparatus for Chemical Tests **	JSS 9620:01:2010	Graphite Dry and Graphite Dry Sulphur Free
11	Equipments/Apparatus for Chemical Tests **	IS 170-2004	Acetone
12	Equipments/Apparatus for Chemical Tests **	IS 251-1998	Soda Ash
13	Equipments/Apparatus for Chemical Tests **	IS 301-1982	Pottassium Nitrate
14	Equipments/Apparatus for Chemical Tests **	IS 1065-1989	Bleaching powder, Stable
15	Equipments/Apparatus for Chemical Tests **	IS 5088-1982	Cotton Textile for Ammunition
16	Equipments/Apparatus for Chemical Tests **	IS 7633-1982	Calcium Carbonate
17	Equipments/Apparatus for Chemical Tests **	IND/ME/761 (b)	Cord Rayon
18	Equipments/Apparatus for Chemical Tests **	IND/ME/888	Tape cotton
19	Equipments/Apparatus for Chemical Tests **	IND/ME/969	Carbon Black for 155mm Ch. 8 &9
20	Equipments/Apparatus for Chemical Tests **	IND/ME/970	Aluminium Stearate
21	Equipments/Apparatus for Chemical Tests **	IND/ME/873	Diethyl Phthalate
22	Equipments/Apparatus for Chemical Tests **	IS 14421-1997	DI-Butyl Phthalate
23	Equipments/Apparatus for Chemical Tests **	IS 264:2005	Nitric Acid Explosive Grade
24	Equipments/Apparatus for Chemical Tests **	IS 266:1993	Sulphuric Acid Technical Grade
25	Equipments/Apparatus for Chemical Tests **	IS 1089:1986	Oleum Technical Grade
26	Equipments/Apparatus for Chemical Tests **	JSS 6810:59:2010	Barium Nitrate Gr.I
27	Equipments/Apparatus for Chemical Tests **	IS 177-1970	Cotton Drill

**** Subject to availability of spare capacity**

Metal And Steel Factory, Ishapore

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Optical Emission Spectrometer	Chemical Analysis (as per ASTM E-415-2008 & ASTM E 1086)	Ferrous Metal and Alloy / Copper Base Alloys/ Zinc Base Alloys
2	Metallurgical Microscope	Macro Examination, Grain Size, Micro structure (as per IS: 13015- 1991&IS 13484:1992)	Steel & Brass Sample
3	Metallurgical Microscope	Non Metallic Inclusion Rating (NMIR) (as per IS: 4163:2004&GOST 1778-1970/ ASTM E-45 –2005)	Steel sample
4	Universal Testing Machine	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction in C/S Area (as per IS-1608 : 2005)	Brass & Steel Sample
5	Hardness Testing Machine	Hardness (Brinell) (as per IS 1500-2005)	Steel Sample
6	Impact load Testing Machine	Impact Load (Ambient to Sub Zero /Charpy-U Notch , V Notch, Izod Test) (as per IS1499-1977 / IS1757-1988&IS1598-1977)	Steel Sample
7	Fracture Toughness Testing Machine	Fracture Toughness Test 9 (as per ASTM E 399-09 & ASTM E 1820-09)	Gun Barrel/ High Strength Alloy Steel Material
8	Chemical Analyser**	Arsenic (As)/ Antimony (Sb) (As per ASTM E-415 & 1086)	Water

** Subject to availability of spare capacity

Gun & Shell Factory, Cossipore

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Wet Analyzer	Chemical Analysis(as per IS 228 (Pt.1,2,3,5,6,8,9)'87	Steelborings/ Plane Carbon/ Low Alloy Steel

2	Optical Emission Spectrometer**	Chemical Analysis (as per IS 8811: 1988(RA 2012) / ASTM-E-1507-98/ IS: 7658-75)	Ferrous & Its Alloys/ Copper & Its Alloys/ Aluminum & Its Alloys
3	Universal Testing Machine**	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction/ Bend Test/ Share Test	Ferrous & Its Alloys/ Copper & Its Alloys/ Aluminum & Its Alloys
4	Hardness Testing Machine**	Hardness (Vickers/ Micro Vickers/ Brinell/ Rockwell) (as per IS 1500-2005 / IS 1500-2005)	Ferrous & Its Alloys/ Copper & Its Alloys/ Aluminum & Its Alloys
5	Pendulum Impact Testing Machine**	Izod & Charpy Impact Strength Test	Ferrous & Its Alloys/ Copper & Its Alloys/ Aluminum & Its Alloys
6	Environment Test Chamber **	Sub Zero Test	-----
7	Horizontal Profile Projector**	Checking of Profile	-----

** Subject to availability of spare capacity

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Spring Load Tester	Testing for Fuze Spring, Capacity-120N	Fuze Spring
2	Coating Thickness Tester	Testing for non ferrous coating on ferrous surface	Non ferrous coating
3	Hardness Testing Machine	Hardness (Vickers/ Digital Rockwell)	Ferrous & Its Alloys/ Copper & Its Alloys/ Aluminum & Its Alloys
4	Magnetic Crack Detector	Testing for Surface crack Detector	Ferrous
5	XRF Machine	Testing for non ferrous Chemical	Non ferrous
6	Universal Testing Machine**	Ultimate Tensile Strength/ Yield Strength/ % of Elongation/ % of Reduction/ Bend Test/ Share Test	Ferrous

** Subject to availability of spare capacity

Rifle Factory Ishapore

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Optical Emission Spectrometer	Chemical Analysis (as per ASTM E 415- 2014/ IS 8811: 1988 , IS 9879 : 1998, ASTM E 1251:2011	Ferrous, Low Alloy Steel, Stainless Steel, Tool Steel & Aluminium Base
2	Wet Analysis	Chemical Analysis (as per IS 228 :1987,IS 504:2002,	Metals andAlloys / Iron, Steel/ Special Steel / Aluminium & its alloys
3	Case Depth Machine	Determination ofCase Depth (as per IS 6416: 1988)	Metals andAlloys
4	Micro Testing	Estimation ofgrain size (as per IS 4748-2009)	Metals andAlloys
5	Impact Testing Machine	Impact Load(Izod Determination of Inclusion Content) (as per IS 4163-2004)	Metals andAlloys
6	Hardness Testing Machine	Hardness (Vickers) (as per IS 1501(Pt:1)-2013)	Metals andAlloys
7	Hot & Cold Conditioning Testing Equipment	Hot & Cold Conditioning (-75°C to 200°C)	-----

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Chemical Analyzer**	Chemical Analysis as per GOST:1905-69/ JSS: 1376-09-1994/ JSS:1975-06:2005.	Dex. Lead Azide/ Pure Lead Azide/ Lead Styphnate
2	Chemical Analyzer**	Chemical Analysis as per IND/ME/993, IND/ME/992, IND/ME/820.	S-243 Composition/ BT-4 Composition/ ME-412 Composition

3	Chemical Analyzer**	Chemical Analysis as per JSS:6810-59:2010/ IND/ME/794/ JSS:6810-96:2011/ JSS:9620-01:2010/ JSS:1376-05:2005.	Barium Nitrate Grade-I, Barium Chromate, Barium Peroxide Gr.-I, Graphite Dry & Graphite Sulphur free/ Gun Powder G-7
4	Chemical Analyzer**	Chemical Analysis as per JSS:1376-05:2005/ JSS:6810-96:2011/ JSS:6810-123:2008/.	Gun Powder G-12, G-20, G-40/ Lead Acetate powder
5	Chemical Analyzer**	Chemical Analysis as per JSS: 8010-63:2004	APC (Shellac Based) APC-201, 202, 211, 218, 222-226/ Sodium Azide/ Lead Nitrate/ AGS Soln for TZ/ Sodium Nitrite/ Magnesium Styphnate/ Sodium Azide/ Lead Acetate
6	Chemical Analyzer**	Chemical Analysis as per JSS:1370-03:2007	Al. Powder Heavy Gr.-I
7	Chemical Analyzer**	Chemical Analysis as per JSS:6810-71:2008/ JSS:6810-120:2009/ JSS:6810-120:2009/ IND/ME/21(a)/ JSS:8030-09:2010/ IS:559/ IS:10744:2001	Antimony Sulphide/ Magnesium Powder/ Mercury/ Mineral Jelly/ Resorcinol
8	Chemical Analyzer**	Chemical Analysis as per JSS:8010-48:2012/ JSS:8030-19:2003/ JSS:8030-24:2011)	APC-219, APC-7, APC-11
9	Chemical Analyzer**	Chemical Analysis as per ID 380:1978	Talc Powder
10	Chemical Analyzer**	Chemical as per JSS:6810133:2001	Zinc Sterate

** Subject to availability of spare capacity

Ordnance Cable Factory Chandigarh

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Sl. No	Test Facility	Test / Specifications	Material to be tested
1	Universal Testing Machine	Ultimate Tensile Strength of wires upto 7mm diameter and insulated Cable.	Wire & cable
2	Torsion Testing Machine	Torsion Strength of metallic wire up to 5mm diameter.	metallic wire
3	Environmental Test Chamber	Conditioning test in temp range -ve 40°C to +ve180°C	-----
4	Cold Chamber / Sub-Zero Chamber	Conditioning up to -60°C	-----
5	Breakdown Tester	High Voltage Test DC: 12KV / AC: 6KV	Cable
6	IR Measuring Set	Insulation resistance of Cable from	Cable

		01M Ω to 10 T Ω	
7	AC HV Test Set	High Voltage test up to 18 KV AC	Cable
8	Attenuation Measuring Instrument	To measure attenuation constant in Frequency range of 0.2 to 1600 KHz for communication cables	Cable
9	H.V. Tester	High voltage testing of Cables up to 4.4 KV AC	Cable
10	Mech. Convection Oven	High voltage testing of cables up to 5 KV AC	Cable
11	AC HV Test Set	Mutual capacitance of cable up to 30 KHz frequency	Cable
12	Mutual Capacitance measurement	Hot test up to 200 ⁰ C	Cable
13	Glass Thermometer	Temperature measurement up to 360 ⁰ C	Cable
14	Melt flow index Test Set	Melt flow index of polymers up to 300 ⁰ C	Cable
15	Portable Wheatstone Bridge	Conductor resistance measurement from .001 Ω to 10M Ω	Cable
16	Vibration Test Machine	Vibration testing with frequency range upto 2.2KHz Shaker Rotation $\pm 90^0$	Cable
17	Bump Test Machine	Bump testing with impact test Acc. 35g. 1000 impect. 100 \pm 15 tmp/min	Cable