Section wise testing charges of M&C Directorate

1. Non-Destructive Testing (NDT) Section:

S.No.	Name of Tests	Testing charges (Excluding GST)
1.	Standardization of ultrasonic testing of axles, wheels, tyres, armature shafts etc.	Rs. 3,16,109/- plus visiting charges as per actual
2.	Magnetic particle testing of ferro-magnetic materials (wheels, tyres, bogie frames etc)	Rs. 7001/-
3.	Dye penetrant testing of different compounds (wheels, tyres, bogie frames etc)	Rs. 7150/-
4.	Ultrasonic testing of rails & welds (AT & FB) & butt welded plates of 300 mm length etc	Rs. 3338/-
5.	Evaluation of radiographs of welds & steel castings (upto set of 6 radiographs), less than 6 radiographs charges will same	Rs.3300/-
6.	Radiographic examination of butt welded plates of size 300 mm length & up to 25 mm thick	Rs. 7130/-
7.	Magnetic Particle testing of pin of lock arm of clamp point lock (Length – 150 mm & maximum dia 40 mm)	Rs. 3784/-
8.	Certification of Ultrasonic Equipments (Single Rail- tester, Axle Tester, Weld Tester)	Rs.3300/-
9.	Certification of ultrasonic double rail- tester (01 No. only)	Rs.3300/-
10.	Evaluation of standard rail piece for calibration & sensitivity setting (SRT, DRT,AT Weld, FB Weld) (01 No. only)	Rs.3300/-
11.	Checking & verification of Quality Assurance Plan(QAP) of agency in connection with outsourcing of USFD testing of rails/Welds.	Rs.13,000/-

A. Metallurgical Investigation & Testing (MIT) Section:

S. No.	Name of tests/Item/Course	Revised testing charges excluding GST (Rs.)
1.	Visual Examination	4900.00
2.	Tensile test/Compression test (Without preparation of test piece)	3744.00
3.	Hardness Test with preparation of test sample	6466.00
4.	Impact Test	3200.00

	(Without preparation of test piece)	
5.(a)	Cold Bend Test (With preparation)	6400.00
5.(b)	For additional bend test	3200.00
6.	Macro Examination (Deep etching Test)	6556.00
7.	Micro Examination (With preparation of sample)	12956.00
8.	Chemical Analysis by Wet method (per element)	9864.00
9.	Testing of galvanised coating Coating thickness Uniformity of coating	 5972.00 6128.00
11.	Digital photograph (a) With three copies (b) For each extra copy	 1804.00 603.00
12.	Digital photomicrograph (a) With three copies (Without preparation) (b) For each extra copy	 2604.00 603.00
13.	Spectrographic analysis of elements in metals and alloys per sample	6117.00
14.	Analysis of results for metallurgical investigation and report making	32000.00
15.	Charges for sample preparation from welding section/M&C or Central Workshop, RDSO	As per charges of concerned section.

B. Rubber & Plastic (R&P) section

A: RUBBER		
S.No.	**Name of Test**	**Testing Charges excluding GST**
1	Visual Examination	1600
2	Dimensional Check	1600
3	Hardness(Shore 'A')(before aging)	1600
4	TS & % EB (before aging)	4800
5	Modulus (before aging)	4800
6	Compression Set	4800
7	Tension Set	4800
8	TS & % EB (after aging)	6400
9	Modulus (after aging)	6400
10	Hardness(Shore 'A')(after aging)	1600
11	Electrical Resistance (before immersion)	3200
12	Electrical Resistance (after immersion)	3200
13	Resistance to Fluid &Chemicals(by volume)	6400
14	Specific gravity	3200
15	Polymer Identification (i) By flame Test	3200
16	Load deflection	4800
17	Adhesion	4800
18	Extended ageing	1600 Per day

19	Extraction	6400
20	Ash content	4800
21	Tear Strength	4800
22	Dynamic Properties of rubber pad	9600
23	Stretch test for 'O' ring	1600
24	Stretch test for Rolling ring	4800
25	Secant stiffess	4800
26	Shear Bond test	4800
27	Before Durability test	
i)	Tensile strength	4800
ii	% relaxed modulus	4800
iii)	impact attenuation test	6400
28	After Durability	
i)	Tensile strength /(per pad)	54400
ii	% relaxed modulus/(per pad)	54400
iii)	impact attenuation /(per pad)	56000
B: PLASTICS		
1	Visual Examination	1600
2	Hardness (Rockwell 'R')/Shore 'D'	1600
3	Dimensional check	1600
4	Melting point/Vicat Softening Point	4800
5	Specific gravity/Density/Bulk density	3200
6	Water absorption	6400
7	Resistance to Boiling water	6400
8	Inherent viscosity/MFI	6400
9	Tensile Strength & Elongation at Break	4800
10	Cross breaking strength	4800
11	Fire resistance/flammability	3200
12	Izod Impact strength	3200
13	Compressive strength Proof Load	4800
14	Compressibility & Recovery	4800
15	Polymer Identification (IR)	6400
16	Ash content/Glass content(%)	4800
17	Electric Resistance	3200
18	Internal Cavity	3200
19	Crushing Test on Bush	1600
20	Annealing test	3200
21	TS & EB after hydroysis of PU sample	4800
22	Chemical test	3200
23	Cross Breaking Load	4800
C: FRP & OTHER COMPOSITE MATERIALS		
1	Visual Examination	1600
2	Dimensional Check	3200
3	Hardness (Rockwell 'R')	1600
4	Ash content (%) Glass content	6400
5	specific graviy	3200
6	insert pull out	3200
7	bolt pull out	3200

8	bending test	4800
9	impact strength/indentation	3200
10	Tensile strength and % elongation at break	6400
11	resistance to boiling water	6400
12	fire resistance/flambility	4800
13	Adhesion	3200
14	resistance to flexing	38400
15	dynamic fatigue test	32000
16	pull belt tensile strength	6400
17	weight square meter	3200
18	construction/count/no of plies	3200
19	breaking strength treated fabric	6400
20	adhesion of laminated or treaed fabric	4800
21	annealing test	3200
22	staining test	3200
23	weldability test of PVC	6400
24	Mandrel flexibility	3200
25	crushing test on bush	1600

C. Composite Development Centre (CDC) Section

S. No.	Characteristics	Revised testing charges excluding GST (Rs.)
1.	Sample Preparation	3200/-
2.	Visual Examination	1600/-
3.	Hardness (Rockwell 'R')	3200/-
4.	Modulus of Elasticity	6400/-
5.	Cross Breaking Strength	4800/-
6.	Acetone Extraction test	10,176/-
7.	Ash content	6400/-
8.	Density/Specific Gravity	3200/-
9.	Shear Strength	6400/-
10.	Bending Strength	6400/-
11.	Tensile Strength & Elongation at Break	4800/-
12.	Toxicity Index	41,276/-
13.	Limiting Oxygen Index	10,080/-
14.	Polymer Identification by FTIR	10,272/-
15.	Izod Impact Test	3200/-
16.	Izod Impact Test with preparation of notch	6400/-
17.	Charpy Impact Test	3200/-
18.	Falling Weight Impact Test + sample preparation	12800/-
19.	Smoke Density – Non flaming (by Optical Density Smoke Chamber) + sample preparation	19200/-
20.	Smoke Density – Flaming (by Optical Density Smoke	19,800/-

	Chamber) + sample preparation	
21.	Deterioration of visibility due to smoke+ sample preparation	16,600/-
22.	Thermal Properties by Anter Flashline Thermal Analyzer + sample preparation	20,148/-
23.	Thermal properties by DSC	14,880/-
24.	Thermogravimetric analysis by TGA	14,760/-
25.	Melt Flow Index	6400/-
26.	Dynamic properties by DMA + sample preparation	16000/-
27.	Melting Point	4800/-
28.	Frictional properties by Tribometer + sample preparation	30400/-
29.	Checking of samples through Polarizing Microscope + sample preparation	16000/-

D. Paint Testing & Corrosion Engineering Lab

S. No.	Name of the Test Characteristics	Revised testing charges excluding GST (Rs.)
1	Drying Time	3260/-
2	Hard Dry @ 700 C	1680/-
3	Consistency	710 /-
4	Viscosity	2310/-
5	Finish	530 /-
6	Colour	533/-
7	Gloss	800/-
8	Spreading Capacity	3380/-
9	Flexibility & adhesion	3200/-
10	Dry Film Thickness	800/-
11	Fineness of Grind	2460/-
12	Pot life	6400/-
13	Mass in kg/10Litrs	3260/-
14	Flash Point (Two components)	6400/-
15	Scratch Hardness	3200/-
16	Resistance to salt Spray for 500 Hrs.	11440/-
17	Resistance to salt Spray for 2000 Hrs.	24240/-
18	Resistance to salt Spray for 3000 Hrs.	35560/-
19	% Volume Solids	6460/-
20	Pigment Content	7800/-
21	Wt. per epoxy equivalent on volatile vehicle content	9900/-
22	Volatile Matter	2460/-
23	Identification of Poly isocyanate	1660/-
24	% Poly isocyanate by mass in Hardener	3500/-
25	Resistance to Acid	2640/-
26	Resistance to Alkali	2700/-
27	Resistance to Solvent	2700/-

28	Resistance to Oil	2700/-
29	Resistance to water	2400/-
30	Resistance to tap water for 3000 hrs	3200/-
31	Abrasion Resistance for 1000 cycles	3200/-
32	Impact Resistance	3200/-
33	Cathodic Disbondment Test	4920/-
33	Resistance to Humidity for 3000 Hrs.	36530/-
34	Resistance to Humidity for 2000 Hrs.	22400/-
35	Resistance to Humidity for 500 Hrs.	11200/-
36	Resistance to Humidity for 168 Hrs.	9600/-
37	Resistance to Chemical for 1800 Hrs.	17380/-
38	Stopping property	2520/-
39	Rubbing Property	3320/-
40	Hold Out Property	4920/-
41	Adhesion & Compatibility of Paint System	2400/-
42	% Solids	3320/-
43	Pigment Analysis	7800/-
44	Flash Point (Single component)	3200/-
45	Non-Volatile Vehicle Content	9660/-
46	Resistance to Kerosene	4920/-
47	Presence of Rosin & Rosin derivative	3200/-
48	Water Content	4980/-
49	Accelerated storage Stability	9780/-
50	Phathalic anhydride content	13400/-
51	Stripping test	3200/-
52	Ash Content	3260/-
53	Wet Abrasion resistance, 5000 cycles	3200/-
54	Pull off adhesion test	4860/-
55	Anti-graffiti test	3260/-
56	Pencil hardness test	2400/-
57	% Zinc Phosphate test	3380/-
58	% Fe2O3	23380/-
59	% CrO3 & % ZnO	24240/-
60	Flattening property	1720/-
61	Resistance to chlorine	2400/-
62	Freedom from lead	1600/-
63	Reaction with white paint	6130/-
64	Resistance to heat	11200/-
65	Resistance to Varnish exterior	6130/-
66	Fitness to take a coat of primer & cellulose finish	6400/-
67	% CaCO3 as CaO by mass	17900/-
68	Fire Resistance test	4800/-
69	Resistance to Lube Oil	3560/-
70	Water absorption	4530/-
71	Resistance to warm water	3200/-
72	Resistance to salt water	8240/-
73	% BaSO4 by mass	19440/-

74	% Cr2O3 by mass	18640/-
75	Leafing Property	1660/-
76	Acid Value	2640/-
77	Settling Property	980/-
78	Residue on sieve	3380
79	Grease content	3380/-
80	Aluminum powder content	4980/-
81	Thinning property	530/-
82	Wet opacity	1660/-
83	Odour	530/-
84	Specific Gravity	2670/-
85	pH Value	1600/-
86	Corrosion test for 24 hrs.	6400/-
87	Rinsability/Miscibility	1660/-
88	Freedom from acidity & Alkalinity	6400/-
89	Determination of free chlorine	6400/-
90	Evaporation loss	6400/-
91	Effect of solvents on insulating materials	9600/-
92	Hot Zinc & Manganese Phosphating test	14400/-
93	Skin irritation	800/-
94	Demulsifying capacity	3200/-
95	Immersion test	19200/-
96	Foaming power	3200/-
97	Lab performance test for cleaning efficiency of liquid cleaning composition	12800/-
98	Effect on metals of liquid cleaning composition	3200/-
99	Field performance test of liquid cleaning composition	12800/-
100	Corrosion test of butt-welded test pieces	19200/-
101	Salt spray test of six pin emergency plug for S&T	5040/-
102	Corrosion test for engine coolant in glassware	20640/-

E. Fuel & Lubricant Section

(A) Grease :--

S. No.	Name of the Tests	Revised Testing Charges excluding GST (Rs.)
1	Acidity/ alkalinity	4440
2	Ash content	6460
3	Cu- strip corrosion	3290
4	Drop Point	3805
5	Evaporation loss of grease	11260
6	Flash point of extracted oil	4115

7	Graphite content	16320
8	K.V. and VI of extracted oil	6660
9.	Mineral oil content/Oil extraction	13840
10.	Moisture content /volatility	3260
11.	Non graphite carbon content	9660
12.	Oil separation on storage	4830
13.	Penetration at 25 C	6515
14.	Resistance to break down	3315
15.	Soap base by flame test	3240
16.	Structural stability	16205
17.	Sulphated ash	11315
18.	Visual Examination	800
19.	Water Content	6630
20.	Oxidation Stability of Lubrication Grease by the Oxygen Bomb for 500 Hrs.	16625

(B) Lubricating oil:-

S. No.	**Name of the Test**	**Revised Testing Charges excluding GST (Rs.)**
1.	Aniline Point	8230
2.	Ash content	5690
3.	ASTM Colour test	1690
4.	Carbon residue Ramasbottom	8160
5.	Cast iron corrosion test	5715
6.	Emulsion characteristics	6505
7.	Flash Point (ABEL), ^{o}C	4975
8.	Flash Point(COC), ^{o}C	4160
9.	Flash Point (PMCC), ^{o}C	4960
10.	Foaming characteristics	12910
11.	Frothing test	4915
12.	Insoluble Hexane & Toluene	13350
13.	Kinematic Viscosity at 100^{o}C, cst	3330
14.	Kinematic Viscosity at 40^{o}C, cst	3330
15.	Neutralization Number (pH, TAN, TBNE)	10465

16.	Pour Point ^{O}C	4930
17.	Rust Preventive Characteristics	8090
18.	Saponification value	6835
19.	Shear stability	5360
20.	Specific Gravity	1660
21.	Sulphated Ash	9690
22.	Thermal stability	9660
23.	Total acidity inorganic & organic	6835
24.	Viscosity Index	800
25.	Visual Examination	800
26.	Water content	6630
27.	Evaporation loss by nocks' method	6530
28.	Air Release Value	9830
29.	RBOT	13135
30.	Demulsibility	11430
31.	Conradson C-Residue	8115
32.	Low temperature pumping viscosity of Engine oil	16625
33.	Low temperature cranking viscosity	8320
34.	Incipient wear of engine components in used engine oil	4890
35.	Wear debris pattern of engine components in used engine oil	14935
36.	Oxidation Stability of Inhibited Mineral Oils for 1000 Hrs.	26845
37.	Miscibility of Lubricating oil	9760
38.	Density	1660
39.	Saponifiable matter	15800
40.	Homogeneity Test as per IS:13656 (ANNEX B) for one fresh oil with one reference oil only	9730
41.	Volatility	3400
42.	Volatile matter	3700
43.	Copper strip corrosion test	3290

(C) HSD

S.No.	Name of the Test	Revised Testing Charges excluding GST (Rs.)
1.	Visual examination	800
2.	Density	1670
3.	Flash Point	4975
4.	Pour Point	4930
5.	Carbon Residue (Rams bottom)	8160
6.	Distillation (Atmospheric)	6775
7.	Distillation (Vacuum)	13060
8.	Diesel Index	8175
9.	Aniline Point	8230
10.	Cetane Index	8115
11.	Ash Content	6460
12.	Water Content	5030
13.	Copper Strip Corrosion	3290
14.	Acidity Organic	3490
15.	Acidity Inorganic	3490
16.	Calorific Value (P7 of IS:1448)	3310
17.	Kinematic Viscosity	3460
18.	Oxidation stability of HSD Oil	25775
19.	Sulphur in HSD	4890
20.	Cetane No.	6720

(D) Bio-diesel & its blends:-

S.No	Name of the Test	Revised Testing Charges excluding GST (Rs.)
1.	Visual examination	800
2.	Density	1670
3.	Kinematic Viscosity	3460
4.	Flash Point	4975
5.	Sulphur	4890
6.	Carbon Residue (Rams-bottom)	8160

7.	Sulphated Ash	9690
8.	Water Content	5030
9.	Total contamination	3405
10.	Copper Strip Corrosion	3290
11.	Cetane No.	3520
12.	Acid Value	3290
13.	Oxidation Stability of Bio-diesel	19575
14.	Moisture content in Bio-diesel	6010
15.	Methanol % by mass, Max	10180
16.	Ethanol % by mass, Max	10180
17.	FAME content % by mass, Max	11635
18.	Free Glycerol % by mass, Max & Total Glycerol % by mass, Max	11920
19.	Iodine value	7700

F. Tribology Section

(A) GREASE:

S.No.	Name of test	Testing charges(Rs) (excluding GST)
1.	SKF-V2F test	84226/-
2.	760 Hrs Rig Test	321211/-
3.	Four ball weld load test	10993/-
4.	EMCOR Test	12938/-
5.	ETRS Test	52064/-
6.	Vibration rig	77826/-
7.	Seal compatibility	12800/-

(B) LUBRICATING OIL:

S.No.	Name of test	Testing charges(Rs) (excluding GST)
1.	Four ball weld load test	10993/-

(C) **HSD/KEROSENE/PETROL**

S.No.	Name of test	Testing charges(Rs) (excluding GST)
1	CFPP	3538/-
2	Total Contamination	4680/-
3	Sediment Content In HSD Oil	6554/-

4	Total Sediment In HSD	12680/-
5	Gum Content	7880/-

(D) LUBE OIL FILTER

S.No.	Name of test	Testing charges(Rs) (excluding GST)
1	Rig life of filter element for ALCO /DLW locomotive	170113/-
2	Rig life of filter element for EMD locomotive	255267/-
3	End Load	1600/-
4	Fabrication Integrity	8556/-
5	High Temperature for ALCO/DLW locomotive	21687/-
6	High Temperature for EMD locomotive	21687/-
7	Resistance To Water	71105/-
8	Bursting Strength Of Filter	3200/-
9	Pore Size Of Filter Paper	12800/-
10	Tensile Strength Of Paper	4800/-
11	Thickness Of Filter Paper	1600/-
12	Ash Content Of Filter Paper	6417/-
13	Basic Weight Of Filter Paper	1600/-
14	Visual Examination & Dimension	6400/-

G. Welding Research Section

A. **MIG/MAG FILLER WIRE** in welding section (BASIC DATA)

S. No.	Description of test/sample preparation	Testing charges (Rs.) (Excluding GST)
1	All Weld Tesile Sample Preparation	19941
2	All Weld Charpy Sample Preparation	14400
3	Corrosion Sample preparation	8251
4	Weld Pad for flux cored wire Sample Preparation	7567
5	Fillet Weld test	9773
6	Fillet Weld (SS) Test	10236
7	Macro/Visual examination test	1600
8	Cast and Helix test	3200
9	Copper Coating content test	3350
10	Filling from core wire for chemical analysis sample preparation	3200
11	Performance Test	9600
12	Diffusible Hydrogen Content test	4880
13	Storage Stability Test	4800

B. **SAW WIRE & FLUX** in welding section (BASIC DATA)

S. No.	Description of test/sample preparation	Testing charges (Rs.) (Excluding GST)
1	Multi Run Tesile Sample Preparation	30209
2	Multi Run Charpy Sample Preparation	14400
3	Two Run Bend Test Sample Preparation	12546
4	Two Run Transverse Tensile Sample Preparation	3200
5	Two Run Charpy Sample Preparation	14400
6	Copper Coating content test	3350
7	Weld Pad Sample Preparation	7486
8	Filling from core wire for chemical analysis sample preparation	3200
9	Visual examination of wire test	1600
10	Storage Stability Test	4800
11	Cast and Helix test	3200
12	Grain size for flux test	6400
13	Tap density test	3200
14	Moisture content test	3200
15	Corrosion Sample preparation	8210

C. **MMAW ELECTRODES** in welding section (BASIC DATA)

S. No.	Description of test/sample preparation	Testing charges (Rs.) (Excluding GST)
1	All Weld Tensile Sample Preparation	19815
2	All Weld Charpy Sample Preparation	14400
3	Butt Weld Sample Preparation	7469
4	a) Transverse Bend 1st Sample Preparation	3200
	b) Transverse Bend 2nd Sample Preparation	3200
5	Transverse Tensile Sample Preparation	3200
6	Usability Test	10742
7	Weld Pad Sample Preparation	7486
8	Fillet Weld test	9684
9	Fillet Weld (SS) Test	10031
10	Corrosion Sample preparation	8210
11	Cutting and Gouging Test	6146
12	Storage Stability Test	4800
13	Performance Test	9600
14	Deposition Efficiency Test	6400
15	Filing from core wire sample preparation	3200
16	Diffusible Hydrogen Content test	4878

Note: GST extra, as applicable, may also be deposited along with testing charges.