

# MSME-TESTING CENTRE AT A GLANCE 2016



सत्यमेव जयते

## MSME

MICRO, SMALL & MEDIUM ENTERPRISES

सूक्ष्म, लघु एवं मध्यम उद्यम

**Government of India**

**Ministry of Micro, Small & Medium Enterprises**

**MSME-Testing Centre, Okhla, New Delhi-110 020**

**(NABL Accredited & BIS Certified Laboratory)**

**[www.msme-tc-nr.gov.in](http://www.msme-tc-nr.gov.in)**

सुरेन्द्र नाथ त्रिपाठी, भा.प्र.सं.  
विकास आयुक्त  
एवं  
अपर सचिव भारत सरकार



सत्यमेव जयते

**DCMSME**  
दूरभाष लघु उद्योग मन्त्रालय

भारत सरकार  
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय



**सन्देश**

एमएसएमई परीक्षण केन्द्रों की स्थापना छोटी-छोटी इकाइयों के कच्चे माल व उत्पाद के परीक्षण इत्यादि के लिये किया गया है। एमएसएमई परीक्षण केन्द्र-एक नजर "2016" का प्रकाशन परीक्षण केन्द्रों की गतिविधियों व उपलब्धियों पर आधारित है।

लम्बे समय से यह आवश्यकता महसूस की जा रही थी कि एमएसएमई परीक्षण के सभी केन्द्रों की गतिविधियों को सरलता तथा संक्षिप्त आकार में प्रकाशित कराया जाये। यह एमएसएमई- एक नजर "2016" का संक्षिप्त प्रकाशन उसी दिशा में उठाया गया एक छोटा कदम है। इसके माध्यम से परीक्षण केन्द्रों में मौजूद परीक्षण सुविधायें व विभिन्न उत्पादों के परीक्षण के दायरे इत्यादि को दर्शाया गया है।

सभी चार परीक्षण केन्द्र की प्रयोगशालाएँ एनएबीएल से प्रत्यायित हैं तथा बीआईएस द्वारा मान्यता प्राप्त हैं।

ये सभी प्रशिक्षण केन्द्र ने मिलकर वित्तीय वर्ष 2015-16 में 22,000 विभिन्न इकाइयों के 1,62,392 परीक्षण किये। इस प्रकार प्रशिक्षण केन्द्र सुविधाओं के साथ-साथ वित्तीय वर्ष 2015-16 में 569.77 लाख रु. का राजस्व भी अर्जित किया है।

मुझे आशा ही नहीं पूर्ण विश्वास है कि एमएसएमई इकाइयों एमएसएमई परीक्षण केन्द्र में उपलब्ध संसाधनों को पूर्ण उपयोग कर सफलता की ऊंची बुलन्दियों पर पहुँचने का प्रयास करेगी।

में, श्री सुरेश यादवेंद्र, निदेशक एमएसएमई परीक्षण केन्द्र, नई दिल्ली व इससे जुड़े अन्य अधिकारियों को इस प्रकाशन कार्य में किये गये योगदान की सराहना करता हूँ।

(सुरेन्द्र नाथ त्रिपाठी)

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**सुरेश यादवेन्द्र**  
निदेशक



भारत सरकार  
मुख्य, लघु एवं मध्यम उद्यम मंत्रालय  
**एम एस एम ई परीक्षण केन्द्र**  
शाहीर कपटन चौड़ मार्ग  
ओखला, नई दिल्ली - ११००२०

### प्राक्कथन

एम एस एम ई परीक्षण केन्द्र भारत के चार महानगरों दिल्ली, कोलकता, चैन्नई तथा मुम्बई में स्थापित हैं। यह एम एस एम ई इकाईयों द्वारा उत्पादित वस्तुओं के परीक्षण की सुविधा उपलब्ध कराकर वैश्विक बाजार में महत्वपूर्ण भूमिका निभा रहे हैं।

इन परीक्षण केन्द्रों के अर्न्तगत क्षेत्रीय परीक्षण स्टेशन भी कार्य करते हैं। मुख्यतः इन चारों केन्द्रों की प्रयोगशाला एन ए बी एल से प्रत्यायित हैं तथा बी. आई. एस. द्वारा मान्यता प्राप्त है।

मैं यह उम्मीद करता हूँ कि एम एस एम ई परीक्षण केन्द्र एक नजर "2016" का प्रकाशन उन सभी छोटी-छोटी इकाईयों की भरपूर सहायता करने का प्रयास करेगा। जिन्हे अपना कच्चा माल व उत्पाद की परीक्षण करवाने की आवश्यकता है।

मैं श्री सुरेन्द्र नाथ त्रिपाठी, विकास आयुक्त एवं अपर सचिव, भारत सरकार, का आभार व्यक्त करता हूँ। जिन्होंने मुझे इस एम एस एम ई परीक्षण केन्द्र एक नजर "2016" के प्रकाशन के लिए प्रेरित व मार्ग दर्शन प्रदान किया।

मैं अपने सभी अधिकारियों व इरासे जुड़े अन्य सभी साथियों को इस प्रकाशन कार्य में किये गये योगदान के लिए धन्यवाद देता हूँ।

**सुरेश यादवेन्द्र**  
(सुरेश यादवेन्द्र)  
निदेशक

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## **OVERVIEW OF MSME-TC**

### **INTRODUCTION:**

In order to help MSE's in their pursuit of growth and development, the Government of India initiated modernization programmes for MSE's Through Small Industries Development Organization (SIDO). In MSE's Sector, because of financial constraints, it was realized that it would be difficult for individual units to set up their own full-fledged laboratories for testing their products for conforming to national and international standards, the Government of India, on the recommendation of the Estimates Committee of Parliament, decided to set up four Regional Testing Laboratories, one each in Northern (RTC, New Delhi), Southern, Eastern and Western regions of the country.

MSME Testing Centres provide testing and calibration facilities to industries in general and MSE's in a particular for raw materials, semi-finished and finished products, manufactured by them. These centres are equipped with the State of art indigenous and important equipments in the disciplines of Chemical, Mechanical, Metallurgical and Electrical Engineering to undertake Performance test, Type test and Acceptance test of semi-finished, finished products etc. These centres are accredited by internationally recognized National Accreditation Board of Testing & Calibration laboratories (NABL) certification as per ISO (17025) and BIS.

### **OBJECTIVES:**

There are 4 MSME-TCs (New Delhi, Mumbai, and Kolkata Chennai). The main activities of these Centres/Stations are as follows:-

- To provide testing facilities to enable MSE's to produce in conformance to various IS Specifications in line with the "ZERO DEFECT ZERO EFFECT" vision of make in India program
- To provide testing facilities in accordance with the requirements of DGS&D and other purchasing departments of State and Central Governments.
- To support other GOI initiatives like start up India, stand up India by providing testing and training facilities.
- To coordinate with Bureau of Indian Standards (BIS) and other technical testing / inspection organisations in matters relating to standardisation of products in MSE's Sector.
- To provide calibration services to the units including those covered under ISO-9000 to meet their mandatory requirement.

## ORGANISATIONAL SET UP OF MSME-TC

The operation of the activities of MSME-TC's are undertaken through the O/o the Development Commissioner (Micro, Small and Medium Enterprises) headed by the AS & DC (MSME).

It functions through a network of MSME-TCs located at New Delhi, Chennai, Mumbai, Kolkata . It provides testing and calibration services to MSME's with four MSME Testing centres of the countries. In order to provide testing facilities in the areas with the cluster of industry and some strategic areas, MSME-Testing Stations (formerly FTS's) have been set up across the country. These are at Jaipur, Bhopal, Kohlapur, Hyderabad, Bangaluru, Pondicherry & Ettumanur.

These centres are accredited by internationally recognised National Accreditation Board of Testing and calibration laboratories (NABL) certification as per IS: 17025.

### OVERALL PERFORMANCE

#### **The Overall performance of MSME-TCs for the year 2015-16**

<b>Revenue earned (In lakh)</b>	<b>Recurring Expenditure (in lakh)</b>	<b>No. of Jobs completed</b>	<b>No. of MSME benefitted</b>
<b>1.</b>	<b>2.</b>	<b>3.</b>	<b>4.</b>
569.77	815.91	1,62,392	6106

#### **No. of Tests Conducted 2015-16**

<b>S.No.</b>	<b>Name of the Centre</b>	<b>No. of Test conducted</b>	<b>Remarks</b>
1.	MSME-TC, Chennai	1,25,029	
2.	MSME-TC, New Delhi	10,591	
3.	MSME-TC, Kolkata	15,199	
4.	MSME-TC, Mumbai	11,573	
<b>Total</b>		<b>1,62,392</b>	

## **TRAINING FACILITY**

Four months training course on testing are carried out in the discipline of Mechanical, Electrical, Chemical & Metallurgy.

### **Period**

1. March to June
2. July to October
3. November to February

No. of Candidates trained during 2015-16 = 35

## **AVAILABLE TESTING FACILITIES**

### **MSME-TC, NEW DELHI**

#### **CHEMICAL TESTING**

Chemical Analysis of ferrous & Non ferrous metals & Alloys, Electroplated & anodized components, in-organic/Organic Chemicals, Paints, Varnishes & thinners, Paper & Stationery Products, Soaps & Detergents, Wax & polishes, Building materials & Bricks, cement, cement concrete, Rural Pans,



*Optical Emission Spectrometer (OES)*



*Weather-O-meter*

Vitreous, China glazed materials, Water for construction, wooden door Shutter & Particle Boards, Brushes, Bitumen & Bitumen Products, Minerals & Ores, Pesticides & Insecticides, PVC/HDPE Pipes, Silver Glass Mirror, Solder & Flux, Stuffed toys/Artificial Jewellery etc., transfer oil

## **ELECTRICAL TESTING**

Stationery Storage Type Electric Water Heater, Electric Instantaneous



*V.A.W Meter*

water Heater, Mineral Filled Sheathed Heating Elements, Electric Iron , Electric Immersion Water Heater, Electric Ceiling Fans & Regulators, Ventilating Fans & Oscillating Fans, PVC Insulated Cables Voltage upto 1100 Volts, PVC Insulated (Heavy Duty Electric Cables Part-I), Cross Linked Polyethylene Insulated PVC Sheathed Cables, Welding Cables , Elastomer Insulated Cables, Aerial Bunched Cables.



*Heating Oven*

## **MECHANICAL TESTING**

Plastic Flushing Cistern for Water closets & Urinals, Pressure Cooker, Domestic Gas Stove use with LPG, Mini Domestic Water Heater for use with LPG, SS Sink for Domestic Purposes, tower Bolts (ferrous & Non ferrous metals, Steel Door Frames, Hot Rolled Steel Sections for door Window and Ventilators, door Handles



*Universal Measuring Microscope (UMM)*



*Universal Length Measuring Machine (ULM)*



## CALIBRATION FACILITIES (MECHANICAL)

External Micrometer, Micrometer setting Rod/ Length Bar, Dial; Gauge



*Surface Roughness tester*

Dial Gauge (Plunger Type), Calliper (Vernier/Dial/Digital) steel Scale, Plain Plug Gauge/Measuring Pin/Thread Measuring wire, Thread Plug gauge, Height Gauge (Varnier Dial/Digital), Surface Plate, Surface roughness, Straight Educe Thickness, Slip Gauge, Block (Parallelism flatness Squareness V Angle), Test Sieves, Glass Scale, Angle Gauge, Measuring Type, Calliper Checker.

## METALLURGICAL TESTING



*Tensile Testing Machine*

Metallic Materials (Cast Iron, Steel, Alloys Steel, Aluminium Copper, Brass etc., (including HSD Bar) all world prepared specimen, Metallic Tubes

Vulcanized Rubber, Aluminium conductors for transmission purpose, Rigid Plain conduit of insulating material Rigid Steel conduit pipe, Precast manhole cover and Frame, PVC Insulated Cable, Thermosetting Synthetic Resin Bonded Laminated Sheets, Metallic Foil



## **MSME-TC MUMBAI**

### **Product Testing (As per IS, IEC & Other International Standards)**

Domestic Electrical Appliances viz. Mixer, Blender, Iron, Washing Machine, Hot Plate, Cooking Oven, Instantaneous and Storage Water Heater, Electric Kettles, Toaster, Electric Heating Pad, Flash Light, Inverters, UPS, Voltage Stabilizer. Electrical Wiring Accessories viz. Switches, Three Pin Plug, Socket Ceiling Rose, Lamp Holder, Metal Clad Switch, Fuse Units, Distribution Box, Kit Kat Fuse, Control Panels. Wires and Cables (PVC, XLPE, Elastomeric, Overhead Conductor) FRLS Cables. Ceiling Fan Ventilation Fan, Table Fan, Air Circulators and Electric Fan Regulators, Luminaries with IP and Photometry Test facility, Ballasts, CFL, LEDS

## **MAJOR HEAD**

High Voltage Test, Temperature Rise Test, FRLS Tests for Cables (Oxygen Index, Temperature Index, HCL, Smoke Density), Degree of Water Ingress Protection IPX3, IPX4, IPX5, IPX6, Degree of Dust Ingress Protection IP5X & IP6X, Thermal Endurance for Choke, Photometry Test, Ceiling Fan Air Delivery Test, EMC/EMI Test (Proposed), Environmental Tests

## **CHEMICAL TESTING**

Polymer Lab - Testing of all types of Rigid and Flexible PVC/HDPE, Pipes and Fittings, Cable Trunking, Conduits, Testing of Plastics and Plastic Products, Paints Testing - Testing of Paints and its various Allied Materials. Chemical Analysis - Testing of Metals and various Chemicals & Stationery Items like Cloths, Pins, Inks, Leather Products and other Household Items, Non Stick Cookware - Testing of various Non sticking and Hard Anodized Cookware. Testing of Coating Thickness - Non-destructive Testing for Coating Thickness in case of Anodized/Power Coated Industrial Components, Testing of Cement, Concrete etc. - Testing of various grades of Cements & Concretes and Allied Materials, Testing facilities for Safety of Toys based on IS: 9873-2001/EN-71, Testing facilities for Water and related Products Testing facilities for Paper Testing

## **MECHANICAL TESTING**

Domestic Pressure Cooker, IS: 2347-2006, Flushing Cisterns, IS: 7231-1994 & IS: 774-2004 Water Closet Seat and Cover, IS: 2548-1996, Bituman Drum, IS: 3575-1993, Non Pressure Wick Stove, IS: 2980-1999, Oil Pressure Stove, IS: 1342-2002, Bib Taps & Stop Values, IS: 781-1984, Pillar Tap, IS: 1795-1982, Fancy

Taps, Stop Values, Pillar Taps, IS: 8931-1993, Ball Value IS: 1703-2000, Values Gate Globe Check, IS: 778-1984, Sluice Value, IS: 14846-2000, 13. Tower Bolt, IS: 204-1992, Door Handle, IS: 208-1996, Aldrops, IS: 2681-1993, Plywood for General Purpose, IS: 303-1989, Plywood Marine, IS: 710-1976, Plywood Shuttering, IS: 4990-1993, Particle board, IS: 3087-2005, Particle board (Veneered), IS: 3097-2006, Pre-laminated Particle Board, IS: 12823-1990, Fibre Boards, IS: 12406-2003, Flush Door Shuttle, IS: 2202/IS:2191, Panel Door Shutter, IS: 1003-2003, Block Board, IS: 1659-2004, Glazed Earthenware Tiles, IS: 1237-1980, Cement Concrete Flooring Tiles, IS: 1237-1980, Ceramic Tiles, IS: 4457-2007, Common Burnt Clay Building Bricks, IS: 1077-1992, Salt Glazed Stoneware Pipes, IS: 651-2007, Diaphragm Type Value, IS: 13049-1991

### **METALLURGICAL TESTING**

Physical Testing of Metals – Hardness Test Rockwell, Brinell & Vickers, Tensile Test, Compression Test, Transverse Test, Bend Test, Re-bend Test, Load Test, Drift and Flattening Test, etc., Elemental Analysis - Commercial grades by Optical Emission Spectrometer Method. Product IS Code, Cast Iron Manhole cover and frame IS: 1726-1991, Corrugated asbestos cement sheet IS: 459-1992 and IS: 5913-1989, Asbestos cement building boards IS: 2098-1997, M.S. Welded flats/joints IS: 3600-Pt-3 & 4 – 2009, Structural Steel IS: 1079-2009, IS: 513-2008, M.S. Tubes/Conduit Pipes IS: 2062-1999, IS: 1608-2005, IS: 1239-Pt-1-2004, IS: 9537-Pt-I and Pt-II-1980 & 81, IS: 1161-1998. Precast concrete manhole covers and frames IS: 12592-2002, Horizontally cast iron double flanged pipes for water, gas and sewage IS: 7181-1986, Vertically cast iron pressure pipes for water and sewage IS: 1537-1976, Steel Pipes Electrically welded IS: 3589-1981, Cast Iron fittings IS: 3989-1984, HSD Steel Bars IS: 1786-2008, Grey Iron Casting IS: 210-2009.

### **MSME-TC, KOLKATA**

#### **CHEMICAL TESTING**

Metal and alloys e.g. Steel, Copper, Aluminium, Tin, Zinc, Detergents, Metallic Coating, Cement Water, Acid, Soda Ash, Paints, Cement, Water, Instrumental Method of Analysis of organic chemicals by G.L.C., Fine chemicals, Trace analysis by atomic Absorption Spectro-Photometer, Color fastness & accelerated weathering of paints by xenon arc. Lamp, Water & Effluents, Timber products, Analysis of ferrous & non-ferrous metals, intermediates and finished chemical

Products. Volume wares. Drinking & Mineral water, Building materials including melting point & Melt flow Index, Processed Food products.

### **ELECTRICAL TESTING**

Tungsten Filament and Miscellaneous Electric Lamps, Compact Fluorescent Lamps (CFL), Multipurpose & Heavy Duty Dry Batteries, Electrical Fans and Regulators, PVC Insulated Electric cables /Heavy Duty, XLPE Insulated PVC Sheathed & Aerial Bunched Cables, Aluminium Conductors for Overhead Transmission Purposes, Testing of selected Household Appliances, Switches & starters (Excluding ON LOAD Tests), Choke for Fluorescent Lamps, Dielectric Strength and Volume /Surface Resistivity & H.V. tests of Insulating materials, Temperature rise test for Overhead conductors, Heating Cycle tests of Fitting using High stability/Accuracy Equipments / Instruments. Mechanical Division Physical Tests like Shear & Impact test at ambient and sub-zero temperature(- 40..) etc. of metallic and non- metallic raw materials & products as per IS.BS & ASTM specification, Testing of items like Construction steel, Building materials, Rubber, Nylon, Tarfelt & PVC Cable AAA Conductor, Plastics, Wires, Paper, Wood, GRP, FRP etc. by Microprocessor Based Computerized Tensile Testing Machine Load Test of C.I. & Concrete Manhole Covers up to 1000KN, Grain size measurement Nodularity, Graphite Flake , Inclusion Rating, Porosity etc. Rubber hoses/HDPE pipes, Wick stove, Tin containers, Fire extinguishers and hydrants Fasters, Mechanical valves.

### **MECHANICAL TESTING**

Brinell, Vickers & Rockwell Hardness Test, Tensile Test, Bend, Rebend test Wedge load test, flatter Test of Metallic and Non metallic Products, Microstructure & depth of Decarburization of Metals and alloys, Case Depth of metallic products, Compressive strength of Brick & concrete Cubes, Proof Load Test of Mechanical Jacks Proof Pressure Test of Sluice, Reflux, Landing and foot Valves C.I. & M.S. Blade Pipes & fittings.

### **METALLURGICAL TESTING**

Physical tests like Tensile, Compression, Shear, Bend, Hardness, Impact etc. on raw materials & products as per IS, BS & ASTM specifications, Testing of items like FRP, Plastics, wires, paper, wood, Rubber etc. in microprocessor based computerized universal testing machine, range

upto 1 tonne force, Load test of C.I. & Concrete manhole covers, proof load test upto 1000 KN, Metallographic analysis.

## **NON DISTRUCTIVE TESTING**

X-ray Radiography testing for Welding, Casting & Forging as per ASTM & other relevant standards, Dye-penetrant test, Ultrasonic flaw detection provided with code of procedure.

## **CALIBRATION SERVICES**

### **CHEMICAL CALIBRATION**

Glass Thermometer, Calibration of Mass Standards, Single pan balance.

### **ELECTRICAL CALIBRATION**

### **IN LABORATORY**

**Source:** AC/DC, Voltage & Current, DC Resistance (low & high), AC/DC Power, Capacitance & Frequency.

**Measure:** AC/DC Voltage & Current, DC Resistance (low & high), AC/DC Power, AC Energy and AC/DC High Voltage.

### **AT SITE**

**Source:** AC/DC, Voltage & Current, DC Resistance (low & high).

**Measure:** AC High Voltage & AC High Current. **Instruments can be calibrated:** Voltmeter, Ammeter, Wattmeter, Power Meter, Multimeter, Megger & Million M Meters, Energy Meter, kV Meter, Power factor Meter, Frequency meter, High Voltage test Set etc., Thermal calibration in laboratory, Thermocouple/RTD with Indicators, Calibration of Tachometers, Stop watches, Bridges, Turn ratio Meter etc. Calibration of various instrument / equipments are performed by using the Reference Instruments like Portable meter test equipment make: ZERA, Germany for Energy Meter calibrating / testing, High Temperature calibration Bath make: PEGAUS, Tinley (U.K) & Multifunction Calibrator, Make: Fluke U.S.A., AC Current Voltage standard, Make: Yokogawa, Japan, High Stability Decade Resistance/Meg ohm box, Make: Tinsley (U.K) and Measure Standards Used like 8 & 1/2 reference Multimeter, Make: Tinsley (U.K) and divider, Make: Hipotronics, U.S.A etc.

## MECHANICAL CALAIBRATION

Length Measuring Instruments, Vernier Caliper & Micro-Meters, Calibration of Height Gauges, Depth Gauges, Angle protractors, Dial Bore & Indicator Gauges, Slip gauges(0,I,II grades); Verification of die with 0.1 Micron accuracy, form and Contour Gauges, External Thread Checking Gauges, Pressure / Vacuum gauges, torque wrenches and Multipliers.

## METALLURGICAL CALIBRATION

Testing M/C Calibration of tensile/ compression testing M/C up to 1000 KN (i.e. 100 tonne), Brinell, Rockwell and Vickers Hardness Testing Machine, Low capacity Impact testing M/C capacity: 14 joule, shore Hardness tester: Type: 'A' & 'D' Performance test/verification of proving ring/Dynamometer/spring Balance Load cell up to 10000 KN. Hardness test block in Brinell, Vickers & Rockwell "A/B/C" scale.

## MSME-TC, CHENNAI

### ELECTRICAL TESTING



Cables & Accessories, PVC Insulated wires, control and Power cable, aluminium products, conductors, earth wires accessories, Electric power connectors, Metal fitting of Insulators, spacer & spacer dampers, stock bridge vibration dampers, Electric iron food, mixers/juicers, water heaters, immersion/instantaneous/stationery/storage types, fan, we grinders, single phase electric

motors upto 1000 W. DC Voltage, DC/AC Current, DC Resistance, AC Voltage, DC Voltage, DC Current, Resistance, AC Voltage AC Current, AC Power, Capacitance, Inductance.



## CHEMICAL TESTING



Packaged drinking, Water/Packaged Natural mineral, Water/Drinking water, food products, Mil, Sugar, Commodities, pulses, Water for processed food Industry, water for swimming pool, water for Ice manufacturer, Enamel Paint, ready Mixed Paint, Primer, Aluminium Paint (Dual Container), Knifing stopper Putty, PU Putty(Two pack), Pu Enamel Paint Finish (Two pack), High performance Anti corrosion epoxy paint(two

pack, PU paint Aluminium fish (three pack, PU Surface (Two pack), Epoxy Zinc Phosphate Primer (two Pack) High Build epoxy paint black(two pack)Stoving Enamel Paint , Black Japan, ABC, Finishing Varnish Exterior-Synthetic air Drying, Linseed Oil.

## MECHANICAL



Stainless steel Kitchen sink for domestic purpose, Automobile components, Mil, Cans (Aluminium Alloys/.SS), Manhole Cover, Electro Plated components, Silver/Nickel/Lead/Chromium/copper/Tin zinc, Galvanised Products, Anodic Coated. aluminium components, Carbon Steel Billets/Ingots, MS Wires & Capes for armouring

of Cables, TMT Rod, Structural Steel, Outside micrometer, Dial gauge Vernier Calliper/Height Gauge, Measuring Scale/Tape, Slip Gauge, Surface Plate, Protractor/Bevel Protractor/combination set Pressure gauge (Hydraulic, Pressure Gauge(Pneumatic), torque Wrenches, Glass thermometer, Temperature Indicator/controller with Thermocouple, Temperature Indicator/controller with RTD,

Temperature Indicator without TC/RTD (By Simulation), Temperature Measure/Source by



Simulation, Handy Calibrator, On-site Calibration for Temperature Bath, On site Calibration for Temperature oven .

### **LABORATORY ACCREDITATION WITH NABL**

National Accreditation Board for Testing and Calibration Laboratories (NABL) is an autonomous body under the aegis of Department of Science & Technology, Government of India. NABL has been established with the objective to provide Government, Regulators and Industry with a scheme of laboratory accreditation through a means for third-party assessment/certification for formally recognizing the technical competence of laboratories to perform specific type(s) of testing and calibration. The accreditation services are provided for testing, calibration and medical laboratories in accordance with International Organization for Standardization (ISO) Standards.

Laboratory Accreditation provides formal recognition of competent laboratories, thus providing a ready means for customers to find reliable testing and calibration services in order to meet their demands. Laboratory Accreditation enhances customer confidence in accepting testing / calibration reports issued by accredited laboratories. Accreditation to a laboratory is given on the basis of its capability to perform test(s) / calibration(s) and provide accurate and reliable results.

The globalisation of Indian economy and the liberalisation policies initiated by the Government in reducing trade barriers and providing greater thrust to exports makes it imperative for Accredited Laboratories to be at international level of competence.

The major sectors in which NABL has granted accreditation are Textiles, Automobiles, Power, Telecom, Petroleum, Food, Health and Environment. As on date, more than 1600 laboratories have NABL accreditation, out of which 20% are Government laboratories. NABL provides accreditation in all major fields of Science and Engineering such as Biological, Chemical, Electrical, Electronics, Mechanical, Fluid-Flow, Non-Destructive, Photometry, Radiological, Thermal & Forensics under testing facilities and Electro-Technical, Mechanical, Fluid Flow, Thermal, Optical & Radiological under Calibration facilities. NABL also offers accreditation for medical testing laboratories.



## MISSION AND VISION OF MSME-TC

MSME Testing Centre is associated with the aims, values and process of creation and dispersal of wealth like customer service, quality, technological excellence or innovation, creative utilization of resources, social responsibility and HRD goals like employee development, motivation and satisfaction of enterprises. The success of the “**Make in India**” mission would depend heavily on the competitiveness of Indian enterprises, particularly MSMEs. “**Zero Defect, Zero Effect**” should thus be developed as an additional mission in collaboration with the industries for a better product. Indian entrepreneur must have to achieve manufacturing excellence through quality products and have to carefully work upon competitive enhancement for their respective business. Skills and knowledge are the driving forces of economic growth and social development for any country. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of world of work.

Major challenge of quality development initiatives is also to address the needs of huge population by providing skills to the youths through trainings in order to make them employable. Skill development for persons working in the unorganized sector is a key strategy in that direction. This will also inculcate dignity of labour and create greater awareness towards environmental, safety and health concerns.

Providing testing facilities to the export oriented units in order to build quality of the products manufactured by SSI sector and thereby improves the export performance from this sector for specified products.

## EFFORTS TO MAKE MSME-TC AS A CENTRE OF EXCELLENCE

Following suggestions are required to be incorporated:

1. Trained testing officers in various disciplines with latest available techniques.
2. Proper marketing /advertising fund to promote MSME testing facilities
3. Regular up gradation of laboratories
4. Digitalisation of reports
5. Sufficient manpower to complete the jobs in time.

6. Discount for customers on batch samples
7. Separate training division for unemployed youths
8. Additional funds for trainings of officers of MSME-TC.
9. MSME- TC convention programmes for officers once in a year for sharing the views of different zones as well as problems which they are facing.
10. Improvement of Quality of Service through customer feedback Payment Facility through ECS.

### **EXPANSION OF MSME-TC NETWORK**

MSME-Testing Centre has been set up by the Govt. of India in main metropolitan cities, Delhi, Chennai, Kolkata and Mumbai. There are Seven Field Testing Station under these MSME-Testing Centre.

It has been observed in general that testing certificates issued by the Govt. Deptt. has been well acknowledged by the beneficiaries. It has greater credential in the society. At present these centres in the financial year 2015-16 has provided its testing facility to above 22,000 Enterprises and have conducted above 1,62,392 tests.

Keeping in view the above aspects, it is visualized that there is greater scope to expand the testing facilities at MSME-DI/Br. MSME-DI across the country. The coverage of testing may be increased manifold. In future, if done so the service of testing may be raised to above 10,000 units. The tests including type test, acceptance & routine tests may go even above 10,00,000 or so. This effort may yield greater contribution to the MSME-sector which is the need of the hour.

## **FUTURE SCOPE OF TESTING FACILITY**

### **MSME-TC, NEW DELHI**

#### **ELECTRICAL DIVISION**

Following facilities may be further added to the Electrical Division to enhance its testing facilities.

1. LED Testing Facilities
2. Solar PV and Module Testing Facilities
3. Testing and Calibration Facility of Energy meter
4. IT/Electronics Products testing facility.
5. EMI/EMC Testing Facilities.

#### **CHEMICAL DIVISION**

Following facilities may be further added to the Chemical Division to enhance its testing facilities

1. Banned amines in textiles.
2. Essential oils.
3. Pesticides and agrochemicals
4. Fibre analysis of paper and wood products.
5. Petrochemicals
6. Coal Testing
7. Cosmetics testing.

## **QUALITY MANAGEMENT SYSTEM IS KEY TO FUTURE GROWTH**

Quality of product or services offered by an organization is an essential requirement for profit and growth. Every entrepreneur has to compete on the basis of Quality of services/Product they delivered.

### **QUALITY**

In general Quality is understood as degree of fulfilling the requirement and expectation of all customers. Hence achieving Quality excellence is a journey and doesn't have an end to it.

In the current period of modernization the principle of survival of fittest is prevalent in each business sector in letters and spirits. In the light of Make in India as one of the flagship programme of the Government, the quality control processes have gained prime importance. It is the prime role of an entrepreneur to produce the product at a competitive price with highest quality standards. Standardization is prerequisite to produce Quality products.

### **QUALITY STANDARDS**

A standard is defined by the national standards Policy advisory committee as:

A prescribed set of rules, conditions or requirements concerning definition of terms; classification of components, specification of materials, performance, operations delineation of procedures or measurement of quality in describing materials, products , systems, services or practices.

In simple terms a standard is the rule or requirement that is determined by a consensus opinion of users and that prescribes the accepted and (theoretically) the best criteria for a product. Process, test or procedure.

The general benefits of a standard are Quality, safety, inter-changeability of parts or systems and consistency across international borders.

To achieve the objective of manufacturing and delivering quality products and services, the effective quality control processes are to be implemented.

The eight management principles can be used by Business leaders as a framework to guide their organization which may be in the area of testing, production or other establishment towards improved performance. These are customer focus, leadership, Involvement of people, Process approach, System approach to management, Continual Improvement, Factual approach to decision making, Mutually beneficial suppliers relationships.

### **QUALITY MANAGEMENT SYSTEM**

Quality management system means quality of the business management carried out in a systematic way covering the whole organization. They are management actions on several levels in an organization including the whole organization, its business in unit or functions, business processes and individual and teams, both strategic and operational management are needed. Leadership emphasizes managers and human aspects in concluding their business actions.

Remarkable business opportunities and development always start at the

level of understanding and personal wills and dreams. Then afterwards the use of practical tools and methodologies, and factual information will be applied more effectively. Organizational development and managements are very deeply culture depend phenomenon. In the western culture explicit facts based managements. practices have been traditionally emphasized on the contrary in the eastern societies Holistic understanding and spiritualism have been prominent.

New knowledge based business conditions have enormous effects and consequences to everything include the behavior of individual, groups, organization, corporation, communities and societies. Quality management is crucial issue for business competitiveness and may be handled in professional way also in these changed conditions one should only have clear and profound understanding of realities of knowledge issues and professional principles and methodology of the modern quality approach. This is a challenge for quality professionals who are developing business integrated quality solutions for knowledge context business environments.

Agility and maturity are not any alternatives but both are needed in the modern business environments. An advance business systems including integrated knowledge based quality management system may create a strong foundation also for the business agility.

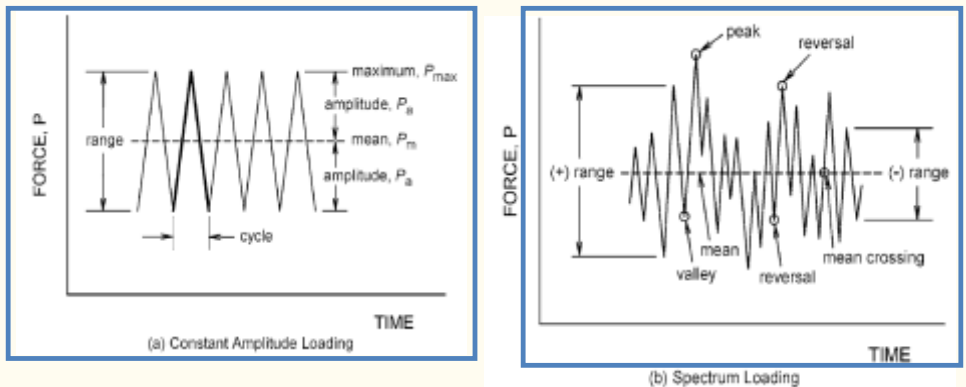
### **FATIGUE TESTING: REQUIRED FOR EMERGING MATERIALS**

As the evolution of the science and technology is growing on, there is a greater demand for developing new materials having superior properties to meet the challenges ahead. The selection of the material depends on the functional requirements for example, the new class of Ni-base super alloy is required for aero-engine disks application which can be used up to 800°C or above, new varieties of materials are needed for development of supersonic intercontinental missiles, similarly materials having high ductile to brittle transition temperature are required for Antarctica and Arctic expeditions as well as cryo-engine of ISRO. Simultaneously, with the development of new material, better understanding pertaining to the microstructure and failure analysis in the field also increasingly motivates to develop new procedures for testing of materials. The comparative fulfilment of functional requirement can be accessed by testing only. Earlier the materials are tested only for few conventional tests such as hardness testing, tensile testing, compressive

testing and impact testing for structural applications. Though these tests are not loosening their significance in the present context but at the same time new tests and better understanding is required as fatigue testing, fatigue crack growth determination, creep and stress rupture testing are becoming more significant for structural application in the field of aerospace, space and nuclear field. The new methods are also important from the safety aspects, the extensive testing and evaluation prior to actual application has the potential to avoid Fukushima nuclear power plant kind of disaster. The present article deals with the recent trends in the fatigue testing materials. This practice is intended to perform in support of such activities as materials research and development, mechanical design, process and quality control, product performance, and failure analysis.

**Fatigue:**

Fatigue is defined as the deformation of a material under dynamic loading. As shown in Fig. 1, two different kind of fatigue loadings can be possible namely, constant amplitude loading and spectrum loading. In the case of constant amplitude loading the entire peak forces (strains) are equal and all of the valley forces (strains) are equal. While in the case of spectrum loading a force-time program consisting of some (or all) unequal peak and valley forces. The spectrum loading is also known as variable amplitude loading or irregular loading.



**Fig.1 Different kinds of Fatigue Loadings**

Fatigue test results may be significantly influenced by the properties and history of the parent material, the operations performed during the preparation of the fatigue specimens, and the testing machine and test procedures used during the generation of the data. The presentation of

fatigue test results should include citation of basic information on the material, specimens, and testing to increase the utility of the results and to reduce to a minimum the possibility of misinterpretation or improper application of those results.

### **Strain-Controlled Fatigue:**

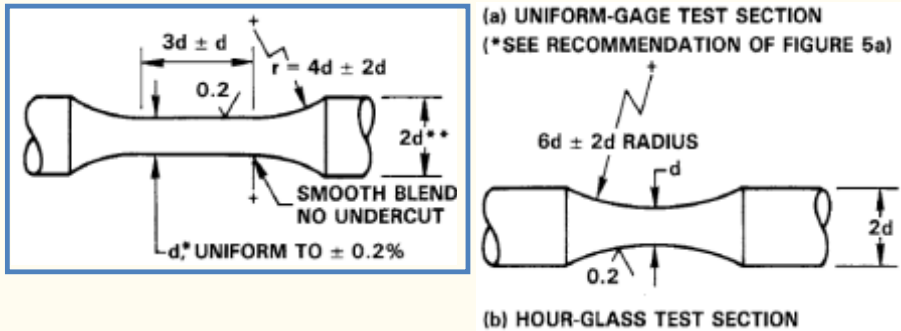
Strain-controlled fatigue can be an important consideration in the design of industrial products. It is important for situations in which components or portions of components undergo either mechanically or thermally induced cyclic plastic

strains that cause failure within relatively few (that is, approximately  $<10^5$ ) cycles. Information obtained from strain controlled fatigue testing may be an important element in the establishment of design criteria to protect against component failure by fatigue.

The nature of strain-controlled fatigue imposes distinctive requirements on fatigue testing methods. In particular, cyclic total strain should be measured and cyclic plastic strain should be determined. Furthermore, either of these strains typically is used to establish cyclic limits; total strain usually is controlled throughout the cycle. The uniqueness of this test method and the results it yields are the determination of cyclic stresses and strains at any time during the tests. Differences in strain histories other than constant-amplitude alter fatigue life as compared with the constant amplitude results (for example, periodic overstrains and block or spectrum histories). Likewise, the presence of nonzero mean strains and varying environmental conditions may alter fatigue life as compared with the.

Constant-amplitude, fully reversed fatigue tests. Care must be exercised in analyzing and interpreting data for such cases.

This test method is applicable to temperatures and strain rates for which the magnitudes of time-dependent inelastic strains are on the same order or less than the magnitudes of time-independent inelastic strains. No restrictions are placed on environmental factors such as temperature, pressure, humidity, medium, and others, provided they are controlled throughout the test, do not cause loss of or change in dimension with time, and are detailed in the data report. The typical sample for this method is shown in Fig.2.



**Fig.2 Strain-controlled Low-Cycle Fatigue Specimens**

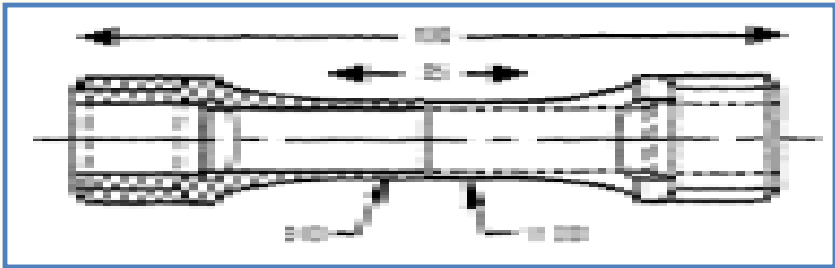
### **CREEP FATIGUE CRACK GROWTH TESTING**

This test method covers the determination of creep-fatigue crack growth properties of nominally homogeneous materials by use of pre-cracked compact type test specimens (Fig.3) subjected to uniaxial cyclic forces. It concerns fatigue cycling with sufficiently long loading/unloading rates or hold-times, or both, to cause creep deformation at the crack tip and the creep deformation be responsible for enhanced crack growth per loading cycle. It is intended as a guide for creep-fatigue testing performed in support of such activities as materials research and development, mechanical design, process and quality control, product performance, and failure analysis. Therefore, this method requires testing of at least two specimens that yield overlapping crack growth rate data. The cyclic conditions responsible for creep-fatigue deformation and enhanced crack growth vary with material and with temperature for a given material. The effects of environment such as time-dependent oxidation in enhancing the crack growth rates are assumed to be included in the test results; it is thus essential to conduct testing in an environment that is representative of the intended application.





mechanical strain phasing, with the restriction being that such parameters remain cyclically constant throughout the duration of the test. No restrictions are placed on environmental factors such as pressure, humidity, environmental medium, and others, provided that they are controlled throughout the test, do not cause loss of or change in specimen dimensions in time, and are detailed in the data report. The use of this practice is limited to specimens and does not cover testing of full-scale components, structures, or consumer products. Various kinds of different specimens can be used for this testing but most often thin walled tubular specimens as shown in Fig.4 are used for TMF testing.



*All dimensions in mm*

**Fig. 4 Samples of Thin-Walled Tubular Specimens for TMF Testing**

Testing is an important tool for assurance of quality. Different types of fatigue testing procedures are available for evaluation which depends upon the loading condition and temperature expected during the application. By adopting the suitable fatigue testing, fatal accidents can be avoided.

### **SUCCESS STORY**

#### **SUCCESS STORY – I**

A sample of Sulphuric Acid received from **Indian Navy, Vishakhapattanam**, Andhra Pradesh. It is a typical sample testing for the first time. It is a known fact that in recent times a ship of Indian Navy drowned in the deep sea with a casualty of 50 persons due to a battery, loaded in the ship burst. On the report of the enquiry



committee it was found that the problem was with the Sulphuric Acid being used in the Battery. Indian Navy collected sample of Sulphuric acid from new manufacturer and sent to MSME-TC, Kolkata for testing. MSME-TC, Kolkata successfully completed the testing as per the standards and provided the test report. It is found that the testing methodology used was to the satisfaction and established the confidence of internal inspection team of Indian Navy. It is also assured that henceforth Indian Navy will send all the samples for testing to MSME-TC, Kolkata. It is indeed a great satisfaction to all the TC officers.

### **SUCCESS STORY – II**

Needless to mention MSME-TCs are providing test services to MSMEs and helping them to supply their stores to OEMs, PSUs and defence establishments. A typical sample received first time from **M/s Hindcon Chemicals Limited**, an MSME unit, for supply of their store to **SEW Infra Structure Ltd., RVNL Project, Chitvet, Andhra Pradesh** of Hind Bolt Resin capsule, which plays vital role to play in the safety of mining. These Resin capsules are used for stitching the bolder after blasting of mines.



The Chemical & Metallurgy division made required arrangements by way designing the mould, used for testing with the experience & expertise of the officers and conducted the test successfully.

### **SUCCESS STORY – III**

**M/s Intercontinental consultants and Technocrats Pvt Limited**, Kolkata approached to MSME Testing Kolkata for their testing requirements for Quality control services under West Bengal accelerated Development of Irrigation project in West Bengal which comprises testing of 324 nos of UPVC pipes till April 2018.

The specification was studied and possibility of tests with the available facilities was analyzed and very competitive price was offered keeping in view the bulk quantity of jobs, the tender requirements and improvement of our capacity utilization viz a viz revenue.

Some alteration in the available facility was made to meet the requirement with a positive view to undertake the work. The order / contract of Rs 13 lakhs approximately has been received in December 2015 and the work has already started. It is indeed a great satisfaction to all the TC officers to undertake the job.

### **SUCCESS STORY – IV**

**M/s Birdman Chemeng Private Limited**, an MSME unit, approached this office for training of their technical officers in mechanical field. The support was provided and 02 nos. of executives were trained at Metallurgy Laboratory by Shri Deepak Kumar AD (Mech) to their satisfaction.

Following Topics were covered during the training.

(a) Function of UTM

(b) Calibration of UTM

(c) Calibration of Proving Rings

(d) Tensile tests under UTM (Ferrous and Non - Ferrous)

(e) Compression Tests under UTM

(f) Bend and Rebind Test



## FEED BACK OF BENEFICIARIES

# POLYCRETE ENTERPRISES

Website : [www.polycreteindia.com](http://www.polycreteindia.com)  
E-mail : [rkj@polycreteindia.com](mailto:rkj@polycreteindia.com)  
Ph. : 0121-2520560

146, Prem Puri, Railway Road, Meerut-250 002

Authorised Manufacturers and Suppliers of Polycrete Manhole Covers, Related Products & Reflective Verge Stones (Patent-Pending)

Dated : 19.05.2016

MSME- Testing Centre  
Shaheed Capt. Gaur Marg  
Okhla, New Delhi – 20



Dear Sirs,

**Re.: -Development of our Polycrete (PFRC) manhole assembly products**

We are thankful for the cooperation extended to us from time to time for the development of our Polycrete (PFRC) Manhole cover & allied products- a proprietary product which was covered under patent as well as is having trade mark. The promoter of this product is Sh.O.P.Ratra being retired from B.M.T.P.C. (a central Government department).

Infect MSME had given us valuable support, advice and suggestions in improving the quality of our Polycrete (PFRC) product in the absence of which we can never be practically at No.1 in northern India for manhole cover assembly products.

Thanking you & trusting the same support and advices in future too.

Yours faithfully  
For Polycrete Enterprises



(R.K.Jain)  
Prop.

## **List of Addresses & contact Number of MSME-TC & MSME-TS**

<b>TESTING CENTRE</b>			
S.No.	Name & Addresses	Contact No.	Email & Website
1.	MSME-Testing Centres (NR) Shaheed Capt. Gaur Marg, Okhla, New Delhi -110 020	011-26314616, 23612671, 26317931, 26312587 Fax- 26847973	<a href="mailto:dctc-r@dcmsme.gov.in">dctc-r@dcmsme.gov.in</a> <a href="http://www.msme-tc.nr.gov.in">www.msme-tc.nr.gov.in</a>
2.	MSME-Testing Centres(WR), Kurla -Andheri Road, Saki-Naka, Mumbai -400072	011-28576090, 3091, 9092	<a href="mailto:dctc-wr@dcmsme.gov.in">dctc-wr@dcmsme.gov.in</a> <a href="http://www.msme-tc.mumbai.gov.in">www.msme-tc.mumbai.gov.in</a>
3.	MSME-Testing Centres (SR) 65/1, G.S. T. Road, Guindy, Chennai-600032	044-22500634,22500284	<a href="mailto:dctc-sr@dcmsme.gov.in">dctc-sr@dcmsme.gov.in</a> <a href="http://www.msme-tc.chennai.gov.in">www.msme-tc.chennai.gov.in</a>
4.	MSME-Testing Centres(ER), 111 & 112, B.T. Road, Kolkata-700035	033-25774055,25770686 24772482, Fax-25771353	<a href="mailto:dctc-er@dcmsme.gov.in">dctc-er@dcmsme.gov.in</a> <a href="http://www.msme-tc.kolkata.gov.in">www.msme-tc.kolkata.gov.in</a>
<b>TESTING STATION</b>			
5.	MSME-Testing Station, Opp. State Bank of India, Industrial Estate, Santhnagar Hyderabad -500018(AP)	040-23704371	<a href="mailto:dcts-hyd@dcmsme.gov.in">dcts-hyd@dcmsme.gov.in</a> <a href="http://www.msme-hyd.ap.nic.in">www.msme-hyd.ap.nic.in</a>
6.	MSME-Testing Station, SISI Campus, Rajaji Nagar, Bangaluru-560014, Karnataka	080-3202540,3351581	<a href="mailto:dctc-banga@dcmsme.gov.in">dctc-banga@dcmsme.gov.in</a>
7.	MSME-Testing Station, Industrial Estate, Changacherry- 686106( Kerala)	0481-2721018	
8.	MSME-Testing Station, Shed No.W47E, Industrial Area Govindpura, Bhopal -462023, Madhya Pradesh	0755-2586075	<a href="mailto:dcts-bhopal@dcmsme.gov.in">dcts-bhopal@dcmsme.gov.in</a>
9.	MSME-Testing Station P-31, MIDC Shirol Industrial Area, Kolhapur -416122, (Maharashtra)	Ph./Fax -0230-2469366	<a href="mailto:dcts-kolha@dcmsme.gov.in">dcts-kolha@dcmsme.gov.in</a>
10.	MSME-Testing Station 22, Godam Indl. Estate, Jaipur-302006 Rajasthan	0141-2212090 Fax-0141-2210553	<a href="mailto:fts.jaipur@rediffmail.com">fts.jaipur@rediffmail.com</a>
11.	MSME-Testing Station Tamil Nadu, Indl. Estate, Thattachavedi, Puducherry -635009	0431-2248110	<a href="mailto:dctc-pondi@dcmsme.gov.in">dctc-pondi@dcmsme.gov.in</a>

## Details of MSME-TC's Website



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**[www.msme-tc-nr.gov.in](http://www.msme-tc-nr.gov.in)**



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**<http://msmetc.com>**



**MSME Testing Centre (Western Region) Mumbai**

**Telephone: (022) 28570588 / 28576998**

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**<http://www.msmetcmumbai.gov.in>**



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**Phone No.: 91 33 2577 0686**

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**<http://www.rtcer.nic.in>**