



MET-HEAT

ENGINEERS PVT. LTD.

IN SERVICE TO INDUSTRIES SINCE 1975

NABL Accredited Laboratory in the field of Metal Testing & Calibration

Company Profile



Met - Heat Engineers Pvt. Ltd. was founded in 1975 by technically competent technocrats having in depth knowledge & experience in the field of metal testing, heat treatment, quality control, calibration & quality assurance to provide service of metal testing to industries. **Today 'Met-Heat' is one of the foremost independent metal testing & calibration laboratory of India** which is acknowledged for its modern facilities, quality test results, reliability, organizational integrity, non-compromising approach, very fast services & competitive rates.

More than 2,000 quality driven clients from different industries like Automotive, Chemical Processing, Aerospace, Defense, Nuclear Power, Fabrication & capital goods manufacturer have trust in 'Met-Heat' for their Material testing and Research & Development requirements.

'Met-Heat' is NABL and BIS accredited laboratory for Chemical & Mechanical field of testing and calibration field in accordance with ISO/IEC:17025 2005. Our laboratory has NABL accreditations **since 01/04/2002**.

Chemist, Engineers, Metallurgists & Technicians at 'Met-Heat' have the qualifications, training, education and experience to meet rigorous standards in the testing field.

Housed in 20,000 sq. ft. premises with working area of about 16,000 sq. ft., 'Met-Heat' is one of a very few labs in India to offer an entire range of metal testing and calibration activities under one roof. Test certificates and calibration reports issued by 'Met-Heat' are widely accepted in the industries and approved by almost all National & International inspection agencies, government undertaking units, public sector undertakings and private sector industries like : ABB, ABG Shipyard Ltd., Alstom, BARC, BIS, BVIL, BHEL, BHPV, DNV, DGS & D, EIL, Essar, GAIL, HWP, GSECL, GLIS, GSPCL, GSFC, GNFC, IOCL, IGCAR, IBR, IRS, L&T, LRA, Linde, MECON, Ministry of Defense, NPCIL, NFC, ONGC, PDIL, PGCIL, Reliance, RITES, SAIL, Suzlon, SGS, Siemens, TPL, TICB, TUV, Technip, Toyo, UHDE & many more.



Pioneer in Metal Testing Activities in Gujarat



We all know about growth rate of Gujarat and input of industries of Gujarat in national growth. It is our proud that “Met-Heat Engineers Pvt. Ltd.”, Vadodara, is pioneer in following testing facilities, in private metallurgical laboratories, in Gujarat.

- First private metallurgical testing laboratory, Since 1975.
- First professional heat treatment shop 1975 with metal testing facilities.
- First universal testing machine .
- First Vacuum Emission Spectrometer.
- First IS / BS impact testing machine.
- First ASTM impact testing machine.
- First in providing tensile test at high temperature (Hot tensile).
- First metallography laboratory for microstructure analysis.
- First metal corrosion laboratory which carries out test as per IS, ASTM, NACE etc.
- First in providing insitu metallography test (Replica).
- First in providing insitu ferrite test.
- First Positive Material Identification machine (PMI Test).
- First Insitu hardness test facility.
- First in providing insitu internal oxide scale thickness measurement.
- First in providing MPI test with 6000 Amp machine.
- First in providing surface roughness at site & laboratory.
- First in providing consumable (electrodes & filler wires) qualification services.
- First Universal length measuring system (For calibration of thread ring & plug gauges).
- First NABL approved metallurgical test house with all metal testing facilities under one roof.
- First BIS approved laboratory for certain Indian standards.



With these much of 'Firsts', we are regularly upgrading our facilities, including manpower to provide customer satisfaction.



Chemical Analysis



WET ANALYSIS LAB



PMI BY MOBILE OPTICAL EMISSION SPECTROMETER



CARBON AND SULPHUR ANALYSIS BY LECO MACHINE



OPTICAL EMISSION SPECTROMETER



PMI BY XRF METHOD

Met Heat is offering expertise in chemical analysis of various metals & alloys since 1975.

Our team of qualified, trained & experienced chemists & technicians can do accurate characterization & identification of various elements present in metal using various methods and instruments. Met-Heat is well equipped with variety of chemical analysis methods & equipment to provide precise, reproducible & reliable determination of number of elements of periodic table.

Our laboratory is accredited by NABL as per ISO/IEC: 17025:2005 for various elements for various ranges.

MAJOR LIST OF EQUIPMENTS & REFERENCES AVAILABLE AT OUR LABORATORY

- Optical Emission Spectrometer (OES 5500II) Shimadzu, Japan Make
- Optical Emission Spectrometer (OES PDA-7000) Shimadzu, Japan Make
- Optical Emission Spectrometer (GVM-514S) Shimadzu, Japan Make
- Carbon & Sulphur Analyser (CS-230) : LECO USA Make
- Portable Optical Emission Spectrometer , Oxford, Germany Make
- Portable Alloy Analyser : Elvatech, Ukraine Make
- Full set up wet analysis laboratory including full set of glass wares, ovens, furnaces, crucibles, digital pH meter, hydrometer, hygrometer, digital balances, thermo couples, temperature indicators, temperature controllers, etc.
- Electrolytic Apparatus with platinum electrodes for Cu & Pb analysis.
- More than 200 CRM of Various Composition for spectro & Wet Analysis

VARIOUS TESTS OFFERED BY CHEMICAL ANALYSIS LABORATORY

- Analysis of Carbon & Sulphur by LECO method.
- Wet analysis of ferrous metals & alloys.
- Wet analysis of Ferro alloys.
- Wet analysis of Aluminum, Nickel, Copper & Zinc base metals & alloys.
- Wet analysis of soldering metals.
- Wet analysis of white metals.
- Spectro analysis of Iron base metals & alloys like carbon steel, low alloy steel, tool steel, austenitic stainless steel, ferritic stainless steel, martensitic stainless steel, duplex stainless steel, super duplex stainless steel, free cutting steels, etc.
- Spectro analysis of Aluminum base metals & alloys.
- Spectro analysis of Copper base various metals & alloys like pure Copper, Brass, Bronze, Gunmetal, Cupro-Nickel, etc.
- Spectro analysis of Nickel base metals & alloys like commercially Pure Nickel, Nickel-Copper alloys (Monels), Nickel-Chromium alloys, Nickel base super alloys, Nickel Fe-alloys, etc.
- Positive material identification of various metals & alloys at site & at laboratory by XRF Method without C, S, P, Si, Al analysis.
- Positive material identification of various metals & alloys at site & at laboratory by OES Method with all elements using mobile spectrometer.

Mechanical Testing



Met Heat is offering on outstanding platform for wide range of mechanical testing of various metals & alloys since 1985. In our advanced machine shop we cut and machine various test specimens with high precision which is the most crucial step which directly affects the final results of many mechanical properties.

Our team of qualified, trained & experienced engineers & technicians are experts for performing various mechanical tests & evaluating the results with various national & international standards. Met Heat is very well equipped with variety of equipment to provide precise, reproducible & reliable results of various mechanical tests.

MAJOR LIST OF EQUIPMENTS AVAILABLE AT OUR LABORATORY

- 20 kN capacity tensile testing machine with electronic extensometer
- 400 kN capacity tensile testing machine with electronic extensometer
- 600 kN capacity tensile testing machine with electronic extensometer
- 1000 kN capacity tensile testing machine with electronic extensometer
- Impact testing machine- ASTM
- Impact testing machine-IS/BS
- Rockwell Hardness Tester (HRA, HRB, HRC, HR 15N, HR 30N)
- Brinell Hardness Tester (Up to 3000 kg/ 10 mm diameter ball)
- Vickers Hardness Tester (HV-5, HV-10, HV-30, etc.)
- Vickers Micro Hardness Tester (10 grams to 1 kg load)
- Portable Hardness Tester (Rebound Principle)
- Portable Hardness Tester (Ultrasonic Principle)
- Video Measuring Machine
- Broaching Machine
- Erichsen Cupping testing machine.
- High temperature tensile test furnaces
- Various jigs & fixtures for bend testing.
- Horizontal Band saw machine Milling, Lathe, Shaping & Surface grinder.
- Low temperature maintaining facilities up to -196°C

VARIOUS TESTS OFFERED BY MECHANICAL TESTING LABORATORY.

- Tensile test at Room temperature.
- Tensile test at high temperature up to 700°C.
- Tensile test at low temperature up to -196°C.
- Various bend tests like root bend, face bend, side bend, reverse bend, parent metal bend, double bend, rebend.
- Flattening , Flaring, Drift Expansion, Reverse flatting
- Pull out test of mock up joints of tube to tube sheet joints
- Cold crushing, Bulk density & Permanent linear change test of refractions
- Charpy 'V' Notch Impact test (+ 100 to -196°C)
- Dimension measurement test
- Proof load of bolt
- Wedge load of bolt
- Full size braking of bolt
- Proof Load of Nut
- Brinell Hardness
- Micro Vickers Hardness
- Tear test, Peel test, Wrap test
- Macro test of welded sample
- Erichsen cupping test
- Unit weight measurement
- Izod Impact test
- Shear test of bolt
- Rockwell Hardness
- Vickers Hardness
- Re tempering test of fastener
- Cantilever test
- Nick break test
- Fracture test
- Shear test of cladded plates
- Glass content test

Metallography Testing



Met Heat is offering expertise on metallographic sample preparation and study of microstructure of various metals and alloys since 1990. Our qualified and trained metallurgists are experts for evaluation of various microstructure & confirming the heat treatment condition of material.

Our special team for sites are capable of performing in situ-metallography i.e. Replica test, i.e. nondestructive microstructure examination at site by portable in situ-metallography kit as per ASTM E-1351. We are providing this services since 1990 to many reputed customers to determine the degradation of critical components of various plants operating in corrosive environment, high temperature & high pressure conditions. So far we have analyzed thousands of microstructure of various metals & alloys in various degraded conditions & heat treated conditions.

Our laboratory is accredited by NABL as per ISO/IEC: 17025:2005 for various tests covered under metallography.

MAJOR LIST OF EQUIPMENT & REFERENCES AVAILABLE AT LABORATORY

- Inverted Metallurgical Microscope, Make Tokyo, Japan (Up to 1000X) with image analysis software & CCD camera.
- Upright Metallurgical Microscope, Make Olympus, Japan (Up to 1000X) with image analysis software & CCD camera.
- Olympus make Stereomicroscope (Up to 45X).
- Portable Electrolytic and Etching Units (4 Nos.).
- Image analysis software & handbook of standard reference microstructure & original reference charts for grain size, inclusion, graphite size, etc.
- Metallography sample cutting/Sectioning machine.
- Band saw Machines.
- Hot mounting press & Cold mounting set-up.
- Sensitization & Heat treatment furnaces.
- Disc polishing Machines (4 Nos.).
- Bench grinder & belt polisher.
- Full Replica Kit (5 Sets).

VARIOUS TESTS OFFERED BY METALLOGRAPHY TESTING LABORATORY

- Microstructure Examination of parent metal to confirm heat treatment condition.
- Microstructure Examination of welded samples.
- Grain size Measurement (As received & Austenitic)
- Inclusion Rating test
- Decarburizing Depth Measurement
- Carburizing/ Nitriding/Induction Hardened case depth measurement
- Coating thickness measurement
- Mesh size measurement
- Macro examination of welded sample
- Macro examination of forged sample
- Macro examination of Rolled product
- Graphite size, type & distribution in cast irons.
- Quantitative metallography to know the percentage of particular phase
- % ferrite in Duplex stainless steel
- Microphotography
- Macrophotography
- Replica Testing (In situ-Metallography)
- Fractography

We can offer all above mentioned tests under all third party inspection agencies.

Corrosion Testing



NACE CORROSION LABORATORY



HIDROGEN INDUCED CRACKING TEST
AS PER NACE TM 0284



SALT SPRAY TEST AS PER ASTM B-117



IGC TEST AS PER A - 262



SULPHIDE STRESS CORROSION
CRACKING TEST AS PER NACE TM --0177

Met Heat is offering expertise on various corrosion testing services since 1985.

Our qualified, trained & experienced team of chemists & metallurgists are experts for performing various corrosion tests & evaluating the results.

Our Corrosion testing laboratory is accredited by NABL as per ISO/IEC: 17025:2005 for various corrosion tests.

MAJOR LIST OF EQUIPMENTS AVAILABLE AT OUR LABORATORY

- Portable Electrolytic Etching & Polishing Units
- Ovens
- Low temperature controlled temper bath
- Various size & type of glass wares
- pH meter
- surface roughness meter
- Pit depth measurement gauge
- Zoom Stereomicroscope
- Digital weighing balance with 0.0001 grams least count
- Distilled water plant
- NACE Corrosion Laboratory set up
- Proving Rings (12 Nos.)
- Four Point Bend sample Loading mechanism
- HIC chambers
- Sulphide Stress Corrosion Cracking set ups (12 Nos.)
- Chloride Stress Corrosion Cracking set up
- High temperature & high pressure SSCC set up (4 Nos.)
- Salt Spray chambers

VARIOUS TESTS OFFERED BY CORROSION TESTING LABORATORY

• Intergranular Corrosion Test as per ASTM A-262

- Practice A
- Practice B
- Practice C
- Practice E

• Intergranular Corrosion Test as per ISO-3651.

- Method A
- Method B
- Method C

- Hydrogen Induced Cracking Test (HIC) as per NACE TM-0284.
- Sulphide Stress Corrosion Cracking test (SSCC) as per NACE TM-0177.
- Chloride Stress Corrosion Cracking test (CSCC) as per ASTM G-36.
- Pitting Corrosion test as per ASTM G-48 Method 'A'.
- Crevice Corrosion test as per ASTM G-48 Method 'B'.
- Four Point Bend test as per NACE TM-0177.
- Corrosion test as per ASTM A-923.
- Salt Spray test as per ASTM B-117.

We can offer all above mentioned tests under all third party inspection agencies.

Non Destructive Testing



A team comprising of expert metallographers, experienced technicians with Level : I / II certificates and expert technicians who performs Ultrasonic Flaw Detection, Magnetic Particle Inspection, Dye Penetrant Testing, Ultrasonic Thickness Gauging Survey, Oxide Scale Thickness Survey of boiler tubes, in situ- metallography, positive material identification using portable alloy analyser, in situ-Hardness testing, Coating Thickness measurement, surface finish measurements, % ferrite in austenitic & duplex stainless steel, etc.



DYE PENETRANT TEST



DYE PENETRANT TEST



ULTRASONIC THICKNESS MEASUREMENT



MAGNETIC PARTICLE TEST



ULTRASONIC FLAW DETECTION



ULTRASONIC FLAW DETECTION

OUR NDT FACILITIES INCLUDE:

- Dye Penetrant Testing kits
- Portable Alloy Analysers (XRF based)
- Portable PMI master with C, S, P, Si, Al and all other alloy elements
- Ultrasonic Flaw Detector, Multiscan MS5800 Series (Tube Inspection System). Phased Array Ultrasonic Testing (PAUT). Time of Flight Diffraction (TOFD).
- Ultrasonic thickness gauges with 0.01 mm Least Count & continuous scanning facility
- Magnetic Yoke with AC/DC mode, Coil, Head – Shot, Black light, Black light intensity meter, 1500 Amp MPI testing machine & 6000 Amp. MPI testing machine, field indicator, cables, Barnastrips & consumables.
- Coating Thickness gauge which includes both metallic & non-metallic coating on Ferromagnetic material & non-metallic coating of non-magnetic metal.
- Surface Roughness meter.
- Portable hardness tester working on rebound & UCI principle.
- Ferritoscope for measurement of % ferrite (or Ferrite Number) in austenitic stainless steel & duplex stainless steel grade.
- In situ-metallography kits.
- Quality X-Ray machine
- In situ internal Oxide thickness measurement instrument.

VARIOUS TESTS OFFERED BY NON DESTRUCTIVE TESTING

- Magnetic Particle Testing
- Ultrasonic Thickness
- Phased array ultrasonic testing
- In situ Hardness
- Surface roughness testing
- Coating thickness measurement
- Visual Inspection
- Positive Material Identification (In situ-chemical Analysis)
- Part of Residual Life Assessment of Boilers and pressure vessels
- In situ-Ferrite test in austenitic & duplex stainless steel
- In Situ-Internal Oxide Thickness measurements. Eddy current Testing (ECT). Remote Field Testing (RFT). Magnetic Flux Leakage (MFL). Internal Rotating Inspection System (IRIS).
- Dye Penetrant
- Ultrasonic Inspection
- TOFD
- In situ Metallography
- Radiography
- Remote visual inspection
- Dimension Measurements

Failure Analysis



STAINLESS STEEL VESSEL



STAINLESS STEEL PIPELINE



CARBON STEEL PIPE



HEAT RESISTING CASTING



CARBON STEEL FLOW TEE

Failure analysis is the process of collecting and analyzing data to determine the cause of failure often with the goal of determining corrective actions to avoid recurrence of same failure in future.

With the help of our experienced chemists, metallurgists, engineers, technicians & our rich experience of metal testing, heat treatment, metallography, knowledge of various codes, corrosion mechanism, knowledge of process & fabrication & with help of experts of other respective field, we can help you on your failure related problems.

We use analytical & mechanical procedures & follow systematic sequence of investigation procedure to know the root cause of failure. We also give metallurgy related recommendation to avoid the recurrence of failure.

MET-HEAT has completed many failure investigation assignments. We meet client to plan the failure analysis before conducting the analysis. The background of failure and the general features of the actual investigation of the failure are considered before starting failure.

PROCEDURE FOLLOWED FOR FAILURE ANALYSIS: -

A complete evaluation sequence of the failure investigation steps are summarized as under,

- 1) Collection of background data i.e. name of component, Id no., original dimension, history of failure, details of surrounding atmosphere, original material grade etc.
- 2) Examination of the failed part i.e. visual examination & Photography
- 3) Non Destructive Testing
- 4) Metallurgical analysis of failed material like,
 - a. Macro Examination (At various locations & magnifications)
 - b. Cutting of samples with suitable method i.e. hand hacksaw, band saw, cutoff etc.
 - c. Chemical analysis (i.e. bulk, localized, deposit, rust, foreign particles, coating material, micro level analysis, XRF, etc.)
 - d. Hardness Testing (i.e. at various locations & using various scale i.e. micro hardness to Brinell hardness)
 - e. Mechanical Testing (i.e. Tensile, Bend, Rebend, Impact at various temperature etc.)
 - f. Microstructures Analysis: At various locations, various cross sections, various magnifications with photomicrographs.
 - g. Inclusion content: At near & away from failure locations.
 - h. Analysis of loading system / fracture mechanism/Design criteria
 - i. Other tests, which has to be decided after the analysis results of above tests like SEM, EDAX etc.
- 5) Literature Survey & Experience of Others
- 6) DISCUSSION: Analysis of all the tests performed as above are discussed for its acceptance or rejection criteria & Correlating all data.
- 7) MOST PROBABLE CAUSE OF FAILURE : From discussion & original background data decision of most probable cause of failure is determined
- 8) RECOMMENDATION: To prevent such type of failure in future recommendations are given, if asked.

Welding



ELECTRODE/FILLER METAL TESTING LABORATORY

Welding is one of the most critical operations in fabricating any job. Quality of welding is very important as when weld fails generally the whole job fails. To achieve good quality of welding the electrodes & filler wires used for welding must be of good quality.

'Met Heat' has our own skilled welders, best quality welding machines, ready stock of good quality tested raw material & experienced team of qualified trained & skilled personnel to facilitate the welding industry with the fastest & the most reliable results. Such type of facility of testing welding electrode & filler wire has been always a dream of the welding consumable manufacturers, engineering & construction companies, project consultants & third party inspection agencies.

MAJOR LIST OF EQUIPMENTS AVAILABLE AT OUR LABORATORY

- SMAW Welding machines
- MIG Welding machines
- TIG Welding machines
- Digital AC/DC Clamp meter
- Electrode drying oven
- Diffusible Hydrogen Testing Apparatus (Mercury Method)
- X-Ray machine with dark-room facility
- All accessories required for welding like various gases, temperature measuring instruments, dimension measuring instruments, weld gauges, etc.



FILLER WIRE TESTING

VARIOUS SERVICES OFFERED BY WELDING DIVISION

- Testing of electrodes up to 6mm diameter
- Testing of filler wires up to 5mm by TIG method
- Testing of filler wires up to 1.6mm by MIG method
- Diffusible hydrogen measurement by Mercury method
- By using same set up we carry our WPS/PQR approval & welder qualification.

We can qualify electrodes & filler wires as per various national, international & company own standards like CE Marking, BIS, ASME, EN-ISO, IRS, rules, ABS rules, LR rules & DNV Rules, IBR Rules etc. at our laboratory.



ELECTRODE TESTING



DIFFUSIBLE HYDROGEN TESTING TESTING

Calibration Services



COMPANY PROFILE:

Met – Heat Services is one of the most reputed and advanced calibration laboratories of Gujarat catering Calibration services of different gauges and instruments in its modern and very well equipped calibration laboratory since 2003. Wide range of services which 'Met – Heat Services' provide include CALIBRATION of dimension measuring instruments, process instruments like pressure gauges, vacuum gauges, different thermal instruments, force measuring instruments (Tensile testing machines), Torque Wrenches, Hardness Testers, Electrical Instruments, NDT equipments & other instruments. 'Met – Heat Services' is NABL accredited laboratory for calibration of mechanical measuring instruments.

MAJOR LIST OF MASTERS AVAILABLE AT OUR CALIBRATION LABORATORY: -

(1) Slip Gauge Block Calibrator (Accuracy +/- 0.02 micron) (2) Universal Length Measuring System (Precision Gauge Calibration Machine for inside/ outside diameter & Thread measurement). Model: Lab Microcal (Least Count 0.1 Micron) (3) Floating Carriage Diameter Measuring machine Range: 0-100 mm, L.C. 0.1 Micron (4) Slip gauge set of 'K' grade Tungsten carbide slips and Slip Gauge Set 'O' Grade with 122 Slips, (5) Slip Gauge Accessories Set (6) Caliper Checker (0 – 600 mm) (7) Dial Calibration Tester (0 – 25 mm) (8) Depth Micro Checker (0 – 300 mm) (9) Number of Length Bars, Long Slip Gauges & other measuring Instruments (10) Angle Gauge Set (11) Torque Wrench Tester (12) Electronic Level (13) Scale & Tape Calibrator (14) Electronic Probe with L.C. : 0.1 μ m (15) Video Measuring Machine and Glass scales (16) Digital Pressure Gauge Set (up to 700 Kg/Cm²) (17) Digital Pressure / Vacuum Gauge (-1 to +1 Kg/Cm²) (18) Universal Calibrator (19) Temperature Calibrator (Amb. to 600°C) (20) Refrigerated Low Temperature Calibration Bath (- 40 to +50°C) (21) Tubecal Temperature Calibrator (500 to 1200°C) (22) Load Cell for Calibration of Universal Testing Machine & Compression Machine. (23) Standard Test Blocks for Hardness Tester (24) Digital Precision Multimeter 6½ (25) Decade Resistance Box (26) Current clamp adaptor (27) multi function calibrator (portable).

VARIOUS CALIBRATION SERVICE OFFERED BY OUR LABORATORY

A DIMENSIONAL MEASUREMENT

Vernier Caliper
Depth Micrometer
Inside Micrometer
Pistol Caliper
Measuring Scale
Plunger Type Dial Gauge
Lever Type Dial Gauge
Feeler Gauge
Dial Calibration Tester
Cylindrical Measuring Pin
Spirit Level
Combination Set
Snap Gauge / Gap Gauge
Surface Plate

External Micrometer
Height Gauge/ Depth Gauge
Dial Thickness Gauge / Inside Caliper / Outside Caliper
Bore Gauge (with Dial, Mechanism)
Plain Ring Gauge
Plain Plug Gauges (Go – Nogo)
Slip Gauges (Grade 'K', 0, 1 & 2),
Thread Plug Gauge (Go – Nogo)
Thread Ring Gauge & Wear Check Ring Gauge
Dim. Measurements of Fixture,
Bevel Protractor
Tri Square (Right Angle)
Straight edge
V-Block for Angle

B PRESSURE GAUGES & VACUUM GAUGES

Pressure Gauge, Vacuum Gauge

C THERMAL GAUGES

D FORCE MEASURING INSTRUMENTS

Portable Hardness Tester
Brinell Hardness Tester (At your works)
Micro indentation Vickers Hardness Tester (At your works)
Universal Testing Machine (At your works)
Torque Wrench

Rockwell Hardness Tester (At your works)
Vickers Hardness Tester (At your works)

E ELECTRICAL INSTRUMENTS

AC / DC Clamp Meter,
Tachometer / RPM Meter
Multimeter

Voltmeter / Amp. Meter
Stop Watch / Timers
Welding Machines
Megger Insulation Tester

F NDT INSTRUMENTS

Coating Thickness Gauge / Tester
Master of Ultrasonic Thickness Gauge
Ultrasonic Flaw Detector
Lux Meter

Master of Coating Thickness Gauge
Ultrasonic Thickness Gauge
Yoke of Magnetic Particle Test

G MISCELLANEOUS INSTRUMENTS

Weighing Balance, Hydrometer
Surface Roughness Tester
Taper Gauge (Welding)
Glass Scale
Wire Gauge
Profile Projector (On Site)
Microscope (On Site)

Cam Type Weld Gauge
Surface Profile Gauge
Radius Gauge
Thread Pitch Gauge
Surface Roughness Specimen
Video Measuring Machine (On Site)
Tape & Scale Calibrator (On Site)



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NABL Accredited Laboratory in the field of Metal Testing & Calibration