









An ISO 9001-2008 Organization























































STEEL PLANT

1. CHEMICAL ANALYSIS:

PIPE LINE

WWW.METALLAB.IN WWW.METALTESTINGLAB.CO.IN

TRUST

COMPETENCE RELIABILITY

Ferrous, Non Ferrous Metals & Alloys by Spectro (OES) / AAS/ICP-OES

Tin plate Cane

Powder Coating

Anodic Coating

Nickel Coating

CORROSION STUDIES

Mild Steel

Cast Iron Pipe

Grey Iron Pipe

PIPES

Silvered Glass Mirrors

Mass of Zinc Coating

Mass of Tin coating

Silver coated Mirror

Copper Coated Mirror

Antimony Zirconium

Beryllium

Anodized Aluminium Coating

Phosphate Treatment of Steel and Iron

Magnesium

Cadmium

Palladium

Bismuth

Coating Thickness

Arsenic

Phosphate Coating



Structural Steel Ferro Vanadium **Gold Coating** Ferro Titanium Cast steel Silver Coating Iron Steel Ferro Molybdenum Ferro Boron **Chromium Coating**

Ferro Tungsten

PRECIOUS METALS

Silver Leaf

Refined Silver

Relined Gold

Ferro Phosphates

Relined Palladium

Relined Platinum

Nickel Silver Sheet

Leaded Brass Ingots

Silver Tin Dental Amalgam

Silver Base Gold Thread

Mild Steel Tool Steel **ALLOYS**

Lead Base Alloys

Copper Base Alloys

Aluminium Base Alloys

- Zinc Base Alloys Tin Base Alloys Iron Base Alloys Nickel Base Alloys Chromium Base Alloys Magnesium Base Alloys Cobalt Base Alloys Tungsten Base Alloys
- Titanium Base Alloys BRONZE Phosphor Bronze Ingots Leaded Brass Ingots **Brazing Alloy** Carbon
- Manganese Silicon Chromium Molybdenum
- Brass Die Casting Free Cutting Brass Bars Free Cutting Brass Rods High Tensile Brass Ingots

Sulphur

Vanadium

Tungsten

Cobalt

Poldi Hardness

Iron

BRASS

- Gate and Hatter Hooks Copper all of Fancy Single Taps **PARAMETERS** Titanium Phosphorous Aluminium Copper Lead
 - Selenium Gold Zinc ON SITE TESTING

Portable Hardness

- Mercury Boron Niobium Tellurium
 - Strontium





Elevated Temperature Tensile Test - up to 1000 deg C



Brinell hardness test Superficial Hardness Test

Charpy V notch Impact Test

FLATTENING TEST / FLARING TEST

Sectional weight of CTD bars Surface Characteristics of CTD Bars

R. T. inclusive of sample machining charges as per ASTM F23 (for a total set of 3 specimens and 3 readings)

WPO/POR TESTING as per ASME/AWS/IS/EN standard

Performance Qualification Test for welders Procedure Qualification Test for welders

Nick-break test for butt-weld test pieces

IMPACT TEST

Charpy / Izod

COMPRESSION TEST

FASTENERS TEST Proof load test for bolts\studs & nuts Proof load test\ breaking load test for U-Bolt, Shackles, Hanger, etc.

BEND TEST

Room Temperature Tensile Test

Tensile test for fine wires/foils

Wedge load test for bolts

Head soundness test for bolts and rivets Unscrewing test for bolts & nuts Re-tempering test for bolts | Drift expansion test

Bend \ Re-bend \ Double bend test/Root / Face /Side bend Test

- Fracture test | Axial Tensile Test Shear test | Dump test Cupping test | Ball Test
- 3. METALLOGRAPHIC TESTING

Permanent set test and twist test for washers

Macro-examination (with or without photo) Micro-examination of ferrous and non-ferrous metals & alloys

(with or without photo-micrograph)

Nitrided depth Measurement

Plating Thickness Measurement

Micro-examination of thin sheets \ nodule count etc.

Metallic coating thickness by micro-examination

Case-depth by micro-examination, Decarburization

Austenitic grain size with or without photo-micrograph Inclusion rating with or without photo-micrograph

Decarburisation by micro-examination with or without photo

Oxygen content in copper by micro-examination Micro Hardness, Coating/Plating analysis, Percentage grain growth, Inclusion Rating, Particle size, Volume percentage, Porosity Effective Case Depth Measurement of case hardened Components Macro examination, Hydro pressure test Weld Qualification Grain size measurement as per ASTM E 112 Inclusion rating as per is and ASTM standards Decarb Layer, Nodularity % & Count in S.G iron,

Graphite type in Grey iron, Weld depth Penetration with photo



Industrial X-Ray

NDT SERVICES

Vibration Analysis

Ultrasonic Testing Magnetic Particle Testing

Neutron Thermography Testing

5. NOT TRAINING & CERTIFICATION COURSE

Failure Mode and Type of corrosive attack / Contributing Factors / Material Anomalies / Feature / Geometric Influence

MPI - Testing

Residual Life Assessment (RLA) of Boilers and pressure vessels

NDT CAPABILITIES

Visual Inspection and Field Services

Ultrasonic Inspection

Time of Flight Diffraction (TOFD) and Phased Array UT Magnetic Particle Testing

ultrasonic phased array flaw

detector & transducer

FAILURE ANALYSIS

Liquid Penetrant Testing Dye Penetrant Testing Radiographic Testing Radiographic Testing Eddy Current Testing Eddy Current Testing Leak Testing Helium Leak Testing / In-Situ Metallography Thermography / Weld ability Study Acoustic Emission Visual Testing Infra Red Testing

tanks and aerospace components. Our curriculum is formalized to provide custom training programs, best

following NDT Methods.

Visual Testing (VT) UT of TKY Joints

1. CALIBRATION TESTING

Mechanical

Mass

Radiographic Testing (RT) Ultrasonic Testing (UT) Magnetic Particle Testing (MT) Liquid Penetrant Testing (PT)



We are providing Level I, II Training and Certification as per Recommended Practice SNT - TC-1A -2006 in the

Rebound Hammer / Rebar Locator / Depth of concrete / Half Cell Potential Test / Carbonation Test / Pile Integrity Test

"METAL LAE" Calibration laboratory has the most calibration capabilities under one roof to serve the varying needs of your business. We serve all industries, Including aerospace, Chemical, engineering, automotive, biotech, high tech Manufacturing, medical & engineering from all around the world. We had the calibrated masters and reference standards for calibration test equipments, process instruments. The following parameters/Instruments are taken up for calibration in our calibration





DP - Testing

6. COMPLETE NON-DESTRUCTIVE TESTING (NDT) - (CIVIL) CONCRETE FOR BRIDGES, DAMS, BUILDINGS, SUBWAYS, TUNNELS ETC...

Measuring tapes

Combination set

Measuring Pins

Coating thickness

Thread plug gauges

calibration of scale

Crimp micrometer

Vernier callipers

Right angle

Radiographic Film Interpretation (RTFI) Ultrasonic Thickness Gauging (UTG)

Electrical AC/DC Current, AC/Dc Voltage, Resistance, Time, Speed, Frequency, Power, etc. Thermal Temperature & Relative Humidity (RH), thermometer, thermo couple Temperature calibrators, furnace, ovens, Hygrometers etc. Process pH, Conductivity, ORP etc. Torque, Compression, Tension, Hardness testing machine, torque Wrenches etc. Flow meter, multi function calibrator, time, mapping, validation etc. Force Special Purpose

DIMENSION CALIBRATION

Snap gauges

Slip gauge

NSD gauges

Bore gauge

Pressure switches •

Ford cup

Taper plain plug

Digital micrometers

Vernier Depth gauge

Digital height gauge

PRESSURE CALIBRATION

Pressure recorders • Safety switches •

Weights, weighing balance, calibration of pipette, glass

NDT – ULTRASONIC MACHINE, IIW V1 & IIW V2 Block Length, Angle, Volume, Density, Pressure, Vacuum, Sound, pressure gauges, test sieves etc.

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Load indicator

Torque wrench

Sound level meter

Spectrophotometer

Temperature indicator •

8. CORROSION TESTING

Mass Coating and Coating Thickness Measurement

Adhesion - Metal rubber bonding strength

Temperature gauges

temperature sensors

Mercurous Nitrate test

9. RUBBER TEST

Hardness Shore 'A'

Hot air oven ageing test

Low Temperature Test

Acetone Extract test

A durometer

Hydrometer Moisture meter

Water bath

Lux Meter

Inside micrometers

Dial vernier caliper

Dial indicators

Welding gauges

Engineer's square

Master foils

Vernier height gauges•

Dial thickness gauges •

Hart communicator Ph meter Calibrators Watt meters Resistance decade box Shore D hardness • Micropipette Validation of furnaces Calibration of Rota meter • Measuring cylindert pH meter

Temperature calibrator

Ovens calibration

Earth resistance tester • Current transformer DC power source Loop calibrator Capacitance meter FORCE / MASS CALIBRATION calibration of pipette • Weight Calibration • Weighing scale Spring balance Tension meter SPECIAL TYPE OF INSTRUMENTS CALIBRATION Light meter Flow meter Air flow meter Noise Meter Sound level calibrator Illumination meter ANALYTICAL INSTRUMENTS CALIBRATION Calibration of glassware Viscosity cup Conductivity meter Melting point apparatus Burette Flame photo meter THERMAL AND HUMIDITY CALIBRATION Temperature transducers • Thermocouple Temperature batht

Temperature Controller Temperature logger • Inter Granular Corrosion Testing (IGC) as per ASTM A – 262 Pitting & Crevice Corrosion test as per ASTM G 48 Specification Evaluation of detrimental inter metallic Phases in duplex Austenitic

thermometer

Ageing in ASTM Oils & Fuels @ specified temp. Compression set test 10. BITUMEN, OIL & GREASE TESTING Softening Point, Flash Point Synthetic and mineral oils/ Engine oils/ Gas engine oils Hydraulic oils/ Transmission oils/ Gear oils/ Coolants cutting fluids/ water based oils/ glycols emulsions Diesel fuel/ bunker fuel and biodiesel Drop Point, Penetration

11. SALTSPRAY TEST Salt Spray Corrosion tests as per ASTM B 117 IS: 101 & ISO: 9227. 15, PAINT TESTING Neutral salt spray test (NSS) / Acetic salt spray test (ASS) Copper Chloride Acetic Acid Saltspray test (CASS) Redemixed paint, Epoxy Paint, PU Paint Humidity tests @ 95 % R.H, 40 to 50 °C (with automatic Parameter control)

WWW.METALLAB.IN WWW.METALTESTINGLAB.CO.IN Metallurgical Testing / Mechanical testing / Non – Destructive Testing (Engineering & Civil) / Training & Certification Mechanical Calibration / Calibration (NDT - Ultrasonic Testing Machine, IIW V1, IIW V2 Block)

> Plastic Testing / Rubber Testing / Paint Testing Steel Trading Stockiest & Suppliers



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Humidity chamber • Muffle furnace Rtd sensors calibration • 12. WATER TEST Ferritic Stainless Steels as per ASTM A – 923
Intergranular Corrosion in wrought, Nickel – Rich, Chromium Bearing Alloys as per ASTM G 28 Method A – Ferric Sulfate – Sulfuric Acid test
Chloride Stress corrosion Cracking Test as per ASTM G 36
Sulphide Stress Corrosion Cracking Test - SSCC as per NACE TM 0177
Hydrogen Induced Cracking Test – HIC as per NACE TM 0284
Mercurous Nitrate test (like E.coli, Faecal coliform, Total coliform) Swimming Pool Water Water for Food Processing Bore Well Water Raw Water & Treated Water Water for Construction Purpose

Cooling Tower Water

13. PLASTIC TEST

Flammability test

Length of flame

Water absorption & Efflorescence

Falling ball test 14. CIVIL CONSTRUCTION MATERIALS Cement Chemical analysis, Compressive Strength, Setting Time Sand & Soil testing, Concrete design mix Coarse aggregate - Sieve, crushing strength etc. Concrete cube - compressive strength Bricks - Compressive strength Water absorption & Efflorescence, Water for construction purpose

Compound gauge • Differential gauge **ELECTRO** – TECHNICAL CALIBRATION Conductivity meter Clamp meter Calibration of ammeter • Resistance meter Meggar V–A–W meter Load cell • calibrated weights • Burettes •

Depth micrometer

Dial height gauge

Measuring scales

Angle Protectors

Dial gauges

Pie tape

Digital vernier caliper

Digital thickness gauges

Degree protector

Radius gauges

Paddle gauges

Grove gauges

Feeler gauges

AC power supply Leakage current meter

Shore A hardness

Multifunction calibrators

Compression test machine

Universal tensile machine

Calibration of microscope

Test equipment calibration

Muller machine

Micropipette

Validation of autoclaves

Pipette

Calibration of devices

Plain plug gauges

Vacuum gauges

Dead weight tester

Spirit level

DFT gauges

'V' block

Hygrometer Temperature recorder • Temperature transmitter Humidity data logger Deep freezer Drinking Water as per IS: 10500: 1991. Packaged Drinking Water as per IS: 14543: 2004 All Chemical Parameters Including Pesticide Residuals.

Heat aging test Impact resistance Fading resistance test Weather ability test Suction test

NABL & ISO Accreditation Consulting, certification, implementation and documentation Geo Technical Investigation / Building Material Testing / Highway Material Testing