

Course Duration : 4 Days Training
Daily Schedule : 7:30am - 3:30pm
Training Date : Upon Request
Training Venue : Doha
Traning Fees : TBI



MAGNETIC PARTICLE TESTING LEVEL 1 and 2I .course outline

Session 1

- Bench Mark Quiz
- General NDT
- Basic Requirements of a good Testing
- SNT-TC-1A Requirements
- Qualification Levels
- Examination Details

Session 2

- Basic Principles
- Theory of MT
- Terminologies in MT
- Limitation and Advantages of Technique.

Session 3

- Circular Magnetization Methods
- Longitudinal Magnetization Methods

Session 4

- Interpretation & Evaluation of Indication as per ASME Code requirements
- Yoke Practical Demonstration

DAY 1

Session 1

- Last Day Quiz Discussion
- Types of currents & effect
- Hysteresis Loop
- Field Distribution

Session 2

- MT methods
- Method Selections
- Advantages & Disadvantages of various methods

Session 3

- MT Equipments
- Current Calculations
- ASME Code requirements

Session 4

- Horizontal Machine & Prod
- Demonstration & Hands on Practical (Visible and Fluorescent)

DAY 2

Session 1

- Last Day Quiz Discussion
- Demagnetization Methods
- Procedure Reading

Session 2

- Types of Discontinuities and Defects found in Welding, Casting, Forging

Session 3

- Horizontal Machine & Prod Practical Practice
- Revision of Syllabus

Session 4

- Mock up paper and Discussion

DAY 3

Session 1, 2

- Theory Examination (General + Specific)

Session 3, 4

- Practical Examination

DAY 4

MAGNETIC PARTICLE TESTING LEVEL 1 and 2I SYLLABUS

1.0 PRINCIPLES

1.1 Theory

- 1.1.1 Flux patterns
- 1.1.2 Frequency and voltage factors
- 1.1.3 Current calculations
- 1.1.4 Surface flux strength
- 1.1.5 Subsurface effects

1.2 Magnets and Magnetism

- 1.2.1 Distance factors vs. strength of flux
- 1.2.2 Internal and external flux patterns
- 1.2.3 Phenomenon action at the discontinuity
- 1.2.4 Heat effects on magnetism
- 1.2.5 Material hardness vs. magnetic retention

5.0 SELECTING THE PROPER METHOD OF MAGNETIZATION

- 5.1 Alloy, Shape and condition of part
- 5.2 Type of magnetizing current
- 5.3 Direction of magnetic field
- 5.4 Sequence of operations
- 5.5 Value of flux density

8.0 TYPES OF DISCONTINUITIES

- 8.1 In castings
- 8.2 In ingots
- 8.3 In wrought sections and parts
- 8.4 In welds

10.0 QUALITY CONTROL OF EQUIPMENT AND PROCESSES

- 10.1 Malfunctioning of equipment
- 10.2 Proper magnetic particle and bath liquid
- 10.4 Bath concentration
 - 10.4.1 Setting test
 - 10.4.2 Other bath-strength tests
- 10.5 Tests for Ultraviolet radiation intensity

About the Instructor



Sangita S. Kapote

Educational Qualifications

B.Sc. (Physics) - Pune University & M.E.S. Abasaheb Garware College.

Professional and Other Qualification

- ASNT Level III in MT, PT, RT and UT – File No. 159734
- 'Certified Welding Inspector' by American Welding Society- Cert. No.05061481 (1st lady in India)
- RT and PT Level II as per EN473
- API 510 Certified Pressure Vessel Inspector,
- 'Certified Welding Inspector' by Indian Society for Non-Destructive Testing
- ISO 9001 Internal Auditor
- Advance Diploma in Computer Software Systems Analysis and its Application (ADCSSAA – year 1998)

PROFESSIONAL EXPERIENCE (Total Experience more than 14 years.)

- INSIGHT QUALITY SERVICES, Pune.
- Period 1995 – 2001 worked as a Admin and Training Coordinator
- Period 2001 – 2006 worked as a Training and Inspection Coordinator Worked as a Training and Inspection Coordinator and NDT Technician.
- Coordinated the inspection activity for Kirloskar Brothers - Pune, Tetra Pak - Pune, Dresser Rand-Ahmedabad etc
- Carried out inspection work PT for SPL Re-boilers, Ador Powertron equipments and Chitale dairy tanks.
- Hands on experience of more than 6 months of Magnetic Particle Inspection of NPCIL studs and bolts checking for Alfa Laval Heat Exchangers.
- Witnessed welding qualification and visual inspection of welding.
- Expediting and Status report work activity for M/s. Alfa Laval India Limited and M/s. Dresser Rand for one project.
- Period 2006 onwards Worked as a Trainer and Jr. Consultant
 - Worked as a Management Representative (ISO 9001:2000). Actively involved in works related to ISO 9001:2000 i.e. preparation of documents and co-ordination of procedures, Implementation, conducting awareness programs, conducting internal audits. Successfully completed the certification of ISO 9001:2000.
 - Worked as NDT Trainer for PT, MT and RT till date in India as well as in Abroad.
Regularly conducted programs in IQS class room as well as for in-house programs for many companies, some of them are:
M/s. Alfa Laval India Limited – PT Level I / II,
M/s. Bharat Forge – MT Level I, Level II and Level III (some part),
M/s. KSB Pumps – PT Level I / II,
M/s. Shrenik Industries – PT and RT Level II
M/s. Kirloskar Brothers – PT Level II,
Kooheji contractors - Baharin - . PT, MT and RT Level II
Forbes Marshall, Ador Welding, etc.



QATAR TECHNICAL PETROLEUM CENTER

MAGNETIC PARTICLE TESTING LEVEL 1 and 2I

QTPC - AN ISO 9001:2008 Regd.



About the Instructor

c. Assisted in ASME U stamp Consultancy work for the following companies, Responsibilities handled -
Total NDE activity – Training, draft procedure making, NDE Setup (RT Darkroom setup facility etc.), Calibration of the NDE equipments, NDE Demonstration upto the satisfaction of AI as a Trainee NDE Level III for the following companies.

- M/s. Alfa Laval (India) Limited, Pune
- M/s. Alfa Laval (India) Limited, Satara
- M/s. Ashoka Iron works – Plant III , Belgaum
- M/s. Mech Engineers, Valsad
- Sparklet Engineers Mumbai
- Ador Welding Limited, Pune
- KBK Engineers, Pune
- Wellsite International, Pune
- Kooheji Contractors, Bahrain. (in progress)
- HLE Engineers Pvt. Ltd., Navsari (Training)
- Raj Engineering Co. , Mumbai
- Transparent Energy Systems Private Limited
- Radiant Heat Exchangers, Pune
- Petrofab, Vadodara
- GEI Hamon (Training)
- Tranter India Limited (Training)
- Ziemann Industries

d. Worked with the third party Agencies like - Lloyd's Registrar, NPCIL, HSBC, Bureau Veritas, TUV.

e. Worked for Alfa Laval India Limited for their Health and Safety (HSE) Audits.

f. Started 5S activity in the IQS.

g. Member of American Society for Non-destructive Testing, American Welding Society and Indian Society for Non-destructive Testing