

Magnetic Particle Testing

Course Information

Magnetic Particle Testing (MT) is a surface and shallow subsurface non-destructive testing (NDT) method that leverages the inherent magnetic properties of materials to uncover surface flaws and significant indications just beneath the surface. The material being tested must possess magnetic qualities, allowing magnetic fields to be either generated within or passed through it. Consequently, MT is primarily applicable to ferromagnetic materials, characterized by having a magnetic permeability significantly greater than 1.

If you have a keen interest in magnetism and are intrigued by the utilization of magnetic fields to identify discontinuities within ferromagnetic materials, Magnetic Particle Testing is the ideal starting point for your NDT career journey.

The techniques employed in MT vary depending on several factors, including the type of current utilised for magnetisation, whether the excitation current is maintained during the application of magnetic particles, and the nature of the magnetic field generated—whether it is linear or circular. Additionally, the method description should encompass details about the specific type of magnetic particles employed to render the indications visible, further enhancing the precision and effectiveness of the testing process.

Embracing MT as your chosen NDT path will immerse you in the captivating realm of magnetism, offering a unique perspective on how magnetic fields are harnessed to detect flaws and discontinuities in ferromagnetic materials—a skill set highly sought after in various industries where material integrity and safety are paramount.

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Please refer to contacts on page 26

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If you are interested in magnetism and would like to find out how magnetic fields are used to detect discontinuities in ferromagnetic material then Magnetic Particle Testing is the place to start your career in NDT.

Inspection techniques depend on the type of current being used to magnetise the material, whether the excitation current is maintained during the application of magnetic particles or not as well as the nature of the

magnetic field generated i.e. linear or circular. In addition the technique description should also refer to the type of magnetic particles used to make indications visible.

The training course is based on general theory as well as sector specific applications relating, but not limited to, the following standards and specifications:

- ASME Boiler & Pressure Vessel Code - Section V - Subsection A - Article 1 & 7
- ASME Boiler & Pressure Vessel Code - Section V - Subsection B - Article 25
- ISO 9934 Part 1 MT – General Principals
- ISO 9934 Part 2 MT – Detection media
- ISO 9934 Part 3 MT – Equipment
- ISO 12707 MT - Vocabulary
- ISO 17638 MT – Welds
- ISO 4986 MT – Castings
- ISO 23278 MT – Acceptance Levels

MAGNETIC PARTICAL TESTING - SAIW CERTIFICATION NDT SCHEME (ISO 9712) NON-DESTRUCTIVE TESTING - SURFACE METHODS											
NDT Method and Level	Industrial Sector	Product Sector / Category	Duration 1 day = 8 hours	Prices (Inclusive of VAT)			Course & Initial Exam Dates				
				Training & Initial Examination Non-Corporate Members	Training & Initial Examination Corporate Members	Initial Certification					
Magnetic Testing Level 1	Pre- and in-service	MT 1.1 Forging (f)	Training 4 days Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	MT 1 A JHB 01	MT 1 A JHB 02	MT 1 A JHB 03	MT 1 A JHB 04
		MT 1.2 Castings (c)					Training	10 - 13 Feb	23 - 26 Jun	13 - 16 Oct	17 - 20 Nov
		MT 1.3 Welds (w)					Exam	14 Feb	27 Jun	17 Oct	21 Nov
Magnetic Testing Level 2	Pre- and in-service	MT 2.1 Forging (f)	Training 4 days Exam 1 day	R 16,100	R 15,000	R 2,500	Course Code	MT 2 A JHB 01	MT 2 A JHB 02	MT 2 A JHB 03	
		MT 2.2 Castings (c)					Training	03 - 06 Mar	14 - 17 Jul	20 - 23 Oct	
		MT 2.3 Welds (w)					Exam	07 Mar	18 Jul	24 Oct	