

# Eddy Current Testing

## COURSE INFORMATION

**Eddy Current Testing (ECT) is an electromagnetic testing method in which electromagnetic induction is utilised to detect any discontinuities. The basic requirement for eddy current testing therefore is that the material being tested or in the case of paint thickness measurement the substrate, should be electrically conductive. ECT can be regarded as both a surface as well as subsurface testing method since the depth to which the inspection can effectively be performed depends on the frequency of the excitation current, the electrical conductivity as well as magnetic properties of the material being tested.**



**If this sounds like a mouthful, then we invite you to dust off your high school knowledge regarding electrical transformers and attend an ECT course.**

The techniques utilised in eddy current testing depends on the sample being tested, i.e. whether it is a surface, tube, bar or other more complex shapes since it dictates the type of probe to be used. Furthermore, the number of frequencies and the inspection mode(s) such as absolute or differential determines the multi- frequency and / or mode technique description. The presence of magnetic saturation weak magnetic alloys, shielding or focussing nature of the probe as well as the display capabilities extends the technique description.

**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 & 8
- ASME Boiler & Pressure Vessel Code - Section V - Subsection B - Article 26
- ISO 15549 ECT – General principles
- ISO 15548 Part 1 ECT – Instrument Characteristics and verification
- ISO 15548 Part 2 ECT – Probe Characteristics and verification
- ISO 15548 Part 3 ECT – System Characteristics and verification
- ISO 17643 ECT – Welds
- ISO 2360 ECT - Non-Conductive coatings – Amplitude sensitive equipment
- ISO 21968 ECT - Non-Conductive coatings – Phase sensitive equipment
- ISO 12718 ECT - Vocabulary



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**EDDY CURRENT TESTING – SAIW CERTIFICATION NDT SCHEME (ISO 9712) NON-DESTRUCTIVE TESTING – SURFACE METHOD**

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					
Eddy Current Testing Level 1	Pre- and in-service	ECT 1.1: Surface (s)	Training 4 days	ECT 1.1 <b>R 17,285</b>	ECT 1.1 <b>R 15,990</b>	ECT 1.1 <b>R 2,780</b>	<b>Course Code</b>	<b>ECT 1.1 - JHB 01</b>	<b>ECT 1.2 - JHB 01</b>	<b>ECT 1.1 - JHB 02</b>	<b>ECT 1.2 - JHB 01</b>
				ECT 1.1 <b>R 17,285</b>	ECT 1.1 <b>R 15,990</b>	ECT 1.1 <b>R 2,780</b>	Training	24 - 27 Jan	06 - 09 Jun	04 - 07 Jul	03 - 06 Oct
		ECT 1.2: Tubes (t)	Exam 1 day	ECT 1.2 <b>R 17,285</b>	ECT 1.2 <b>R 15,990</b>	ECT 1.1 <b>R 2,780</b>	<b>Course Code</b>	<b>ECT 1.1 - CPT 01</b>	<b>ECT 1.2 - CPT 02</b>		
				ECT 1.2 <b>R 17,285</b>	ECT 1.2 <b>R 15,990</b>	ECT 1.1 <b>R 2,780</b>	Training	31 Jan - 03 Feb	01 - 04 Aug		
							Exam	04 Feb	05 Aug		
Eddy Current Testing Level 2	Pre- and in-service	ECT 2.1: Surface (s)	Training 4 days	ECT 2.1 <b>R 17,285</b>	ECT 2.1 <b>R 15,990</b>	ECT 2.1 <b>R 2,780</b>	<b>Course Code</b>	<b>ECT 2.1 - JHB 01</b>	<b>ECT 2.1 - JHB 02</b>		
				ECT 2.1 <b>R 17,285</b>	ECT 2.1 <b>R 15,990</b>	ECT 2.1 <b>R 2,780</b>	Training	22 - 25 Mar	05 - 08 Dec		
		ECT 2.2: Tubes (t)	Exam 1 day	ECT 122 <b>R 17,285</b>	ECT 2.2 <b>R 15,990</b>	ECT 2.1 <b>R 2,780</b>	Exam	28 Mar	09 Dec		

Please note that any comments, compliments or complaints related to:

1. Training can be forwarded to [quality@saiw.co.za](mailto:quality@saiw.co.za)
2. Examination and Certification can be forwarded to [quality@saiw.co.za](mailto:quality@saiw.co.za)