

## Introduction of Insulated Component Scan (INCOS) Technology

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**Abstract:** Pulsed Eddy Current Accurate Testing (INCOS) is a kind of non-destructive testing technology which can realize high precision and no omission in measuring pipe fitting, and has been widely used in petrochemical field. This content introduces the development history and domestic application of INCOS technology, focuses on the application and research progress in conventional equipment, pipelines, small nozzle, furnace tube (CFB, pulverized coal furnace, etc.), heat exchanger tube bundle, valve, tower wall, etc. And points out the existing problems and future development direction of INCOS technology. The INCOS (INSulated Component Scan test) technology is a comprehensive corrosion detection technology that uses a pulsed eddy current high-precision sensor (no more than 2cm in diameter) to fully scan equipment and process pipes. Also can quickly and accurately obtain the defect distribution, hidden danger location and severity in the measured area, and provide data support for the maintenance and repair of equipment and process pipelines. Compared with the traditional pulse eddy current testing (by loading and turning off the current in the probe, this can excite a rapidly decaying induced magnetic field, and then analyze the received induced signal to obtain the detection method of the metal wall thickness distribution), however, pulsed eddy current accurate testing is a method of detecting abnormal defects by continuously cutting the volume of deposited metal and continuously calculating the change of pulse signal characteristic map under the volume. In order to ensure the accuracy of the test results, the defective abnormal areas are reinspected by ultrasonic and other technical means. INCOS technology pursues the accuracy and omission of test results. It uses pulse eddy current technology to quickly locate defects due to its convenient operation and high detection efficiency on the production site, and then uses other means to assist in obtaining accurate results to meet the daily safety production needs of enterprises.

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