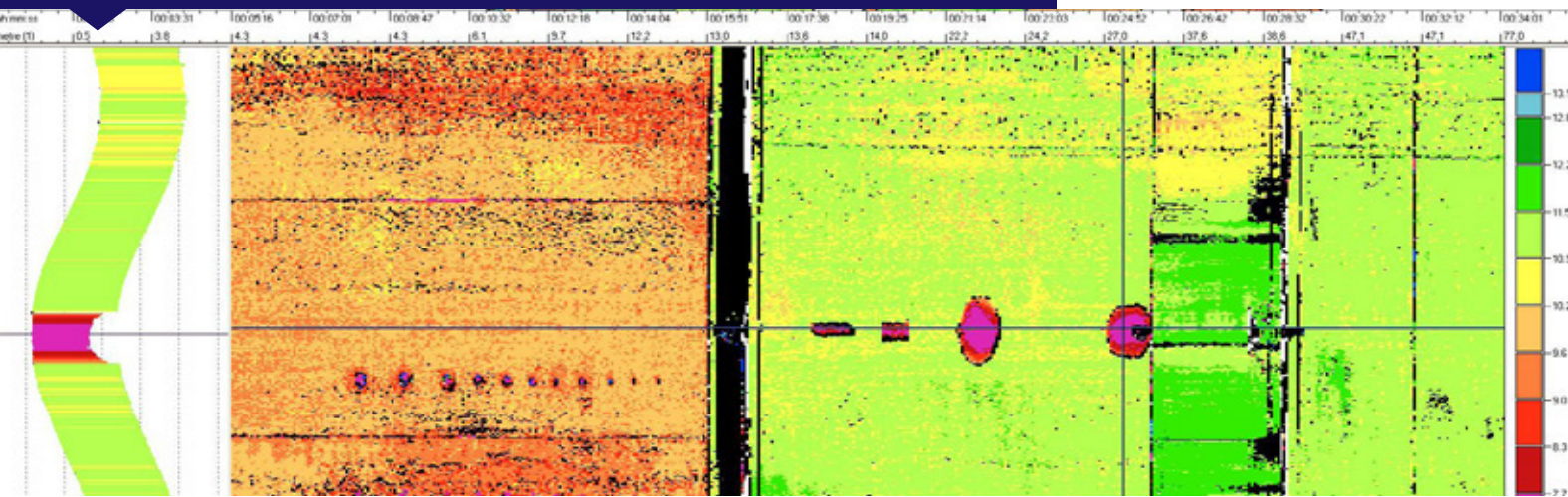


ULTRASONIC FLAW TESTING C SCAN (corrosion mapping)



What are the advantages of corrosion mapping?

The main advantage of corrosion mapping is that it guarantees 100 percent scan coverage of the area under examination. This gives a much improved effectiveness over a standard 'random' UT wall thickness scan where it cannot be demonstrated whether a specific area has been fully examined or not. Tests with a corrosion mapping system will quickly show that.

Without the aid of a display confirming the unscanned areas (grey or black on the screen), even a competent technician doing a thorough technique will only cover about 60-70 percent of the scan area. This percentage reduces when the scan is complicated by poor surface finish or irregular geometry. Another practical advantage is that corrosion mapping produces a permanent record of corrosion measurements. This allows comparisons to be made between subsequent in-service inspections to check the rate at which corrosion is progressing.

Thickness measurements are taken using a conventional 0° ultrasonic probe. A light emitting diode (LED) is attached to the top of the probe. A video camera is positioned such that the area of interest is within the field of view. When the probe is moved over the surface of the vessel or pipework the camera tracks its position.

The scan area is divided up by the computer into a number of smaller areas. The smaller areas are known as pixels and effectively define the scan resolution. The more pixels within the area, the finer the resolution. Depth ranges within the component are assigned different colours, similar to the way an ordnance survey map shows height above sea level. As the probe is moved within the scan area the system assigns the relevant colour to each pixel and the image is built up.

Any variations of thickness can be easily identified and corrosion/erosion trends can often be seen.

