

1.3.31. RELIABILITY OF GUIDED WAVE ULTRASONIC TESTING

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The Guided wave testing method (GW) is increasingly being used worldwide to test in-service pipe-work for corrosion. As a screening tool, GW is generally used to manage inspection tasks in a time and cost efficient manner. However, the perception of screening often encountered in the industry is that it is inferior to other methods, such as manual ultrasonic testing, when it comes to probability of detection (POD) of defects.

This paper examines the factors that affect the probability of detection for GW and manual ultrasonic testing (UT) and demonstrates that in many practical applications the POD for GW inspection is significantly higher than that for UT. Also, it is often neglected that the standard procedure for GW inspection includes prove-up of indications using a secondary inspection method, thereby optimizing the accuracy and reliability of the inspection. The effect of combining GW with manual UT as a secondary prove-up tool on the reliability and efficiency of an inspection is therefore discussed in detail.