Measuring The Internal Discontinuity For Carbon Steel
Using DAC (Distance Amplitude Correction) Curve

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Abstract

This final project is to measure the deviation of internal discontinuity for carbon steel using Distance Amplitude Correction (DAC) method by digital ultrasonic flaw detector. To determine the deviation of this method, the specimen was drilled to produce artificial discontinuity. The depth of artificial discontinuity varied into ¼ T, ½ T and ¾ T from surface on 75 mm and 38 mm material of thickness. For 75 mm, diameter of discontinuity varied into 2,5 mm and 5 mm. And for 38 mm, diameter of discontinuity varied into 3 mm and 6 mm. This testing is using 45° angle probe.

Based on the testing result, the distance of discontinuity from the surface influence the accuracy of the testing result. In measuring at 2,5 mm and 5 mm diameters of discontinuity with 75 mm material of thickness, the deviation is 4,6%. So, to measuring the real internal discontinuity need to be added value by ± 4,6%. Although, in measuring at 3 mm and 6 mm diameters of discontinuity with 38 mm material of thickness, the deviation is 5,8%. So, to measuring the real internal discontinuity need to be added value by ± 5,8.

Keyword : Ultrasonic testing, internal discontinuity, DAC