HOMC-CUPS APPLICATION NOTE-1

HOMC APPLICATION NOTE-1

Corrosion Assessment Under Welded Supports / Saddles

ESCON DHVANI
HIDDEN CORROSION INSPECTORS

Welded Supports

Welded saddle supports involves welding a part to the pipe which is usually free to move at the interface to the support. There are a number of variations of this and is a common approach for insulated piping systems.

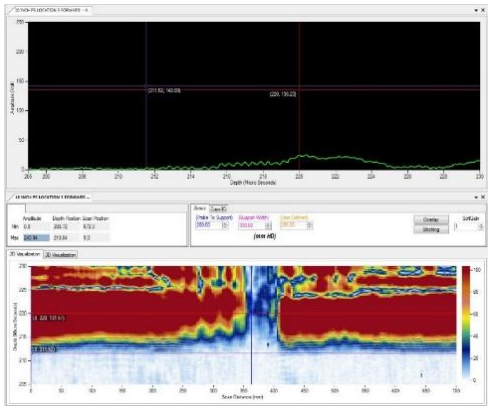
The typical source of corrosion is water ingress and accumulation of water under the pad leading to corrosion that can lead to failure with no warning signs due to the very localized nature of the problem and corrosion profiles.

Challenges to Welded Support Corrosion Inspection

The welds on the periphery of the pad tend to reflect Ultrasonic signals and detection and sizing of localized corrosion under same under the pad can be challenging, or results could be skewed.

HOMC Guided Waves as an Ideal Solution

The Higher Order Mode Cluster (HOMC) Ultrasonic Guided waves are unaffected by the welds in the welded support and can resolve closely spaced defects. It also provided accurate sizing along with a cross sectional profile of the corrosion for easy visualization and engineering integrity assessments.



30inch Discharge Line Welded Support Failure Assessment Case Study

A leading Petrochemical plant experienced a failure at a Welded Support of a 30inch discharge line with no signs of visible corrosion at the region of failure. A Clamp repair was done towards the end of the support where the leak was observed. The aim of the inspection was to assess the condition of the pipe under the welded support with HOMC.

HOMC-CUPS APPLICATION NOTE-1

HOMC APPLICATION NOTE-1

Corrosion Assessment Under Welded Supports / Saddles

ESCON DHVANI
HIDDEN CORROSION INSPECTORS

HOMC INSPECTION APPROACH FOR 30inch DISCHARGE LINE WELDED SUPPORT CORROSION ASSESSMENT

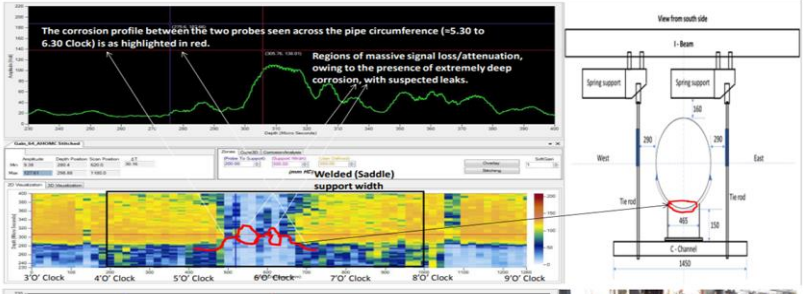
Since the inspection involved, ascertaining the presence of any corrosion under the support and then going on to further evaluate the corrosion profile along the length and circumference for engineering integrity assessments, the inspection was done in two ways.

An Axial HOMC Through Transmission (AHOMC_TT) mode inspection was done with the probes placed on either end of the support facing each other to assess the corrosion profile and wall loss across the circumference which was found to be presented between **5**½ and 6½ clock positions

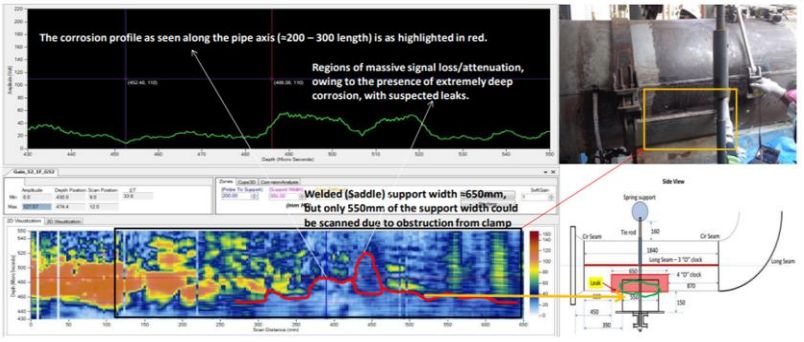
A Circumferential HOMC Through Transmission (CHOMC-TT) mode inspection was done in addition to estimate the corrosion along the length of the support and the inspection revealed corrosion along the entire length with an average of 71-80% wall loss along with some deep localized spots with >80% wall loss based on a nominal wall thickness of 15.88mm.

A subsequent inspection of the saddle for its integrity was also done which revealed no major findings on the saddle itself confirming the corrosion to be on the discharge line under the support. Precise engineering assessment was done based on HOMC Inspection findings by the client to determine safe continued operation.

AHOMC-TT Circumferential Profile of Defect



CHOMC-TT Axial Profile of Defect



HOMC
RELIABLE- PRECISE -ACCURATE
FOR WELDED SUPPORT CORROSION ASSESSMENT