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## **Determination of Thickness of Overlay and Hard Facing by Ultrasonic Techniques**

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### **Abstract**

The assessment and evaluation of fusion zone including the thickness in the overlay and hard facing by welding is very much required during fabrication. In one of the cases, a stellite deposition on austenitic stainless steel base for a reactor component has to be examined using ultrasonic examination. Generally, for such combinations that a high amplitude interface signal was observed due to the acoustic impedance mismatch between the materials. This restricts the possibility of detection of lack of bonding between the two materials. Techniques have been devised by the authors to overcome this shortcoming and being used to evaluate the quality of the deposition. This phenomenon of interface reflection of ultrasonic waves can be gainfully employed to quantify the thickness and fusion line of overlay or coating. The paper highlights our experience on different combinations such as Stellite overlay, Titanium overlay, Colmonoy, Chromium plating etc. on austenitic stainless steel and the results obtained.