



NATIONAL INSTITUTE OF HEALTH
DEPARTMENT OF HEALTH AND HUMAN SERVICES

PHYSICIAN ASSISTANT

GENERAL PRACTICE

PHYSICIAN ASSISTANT

ACKNOWLEDGEMENT

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ABSTRACT

Welding inspection using ultrasonic method is one of the Non Destructive Testing (NDT) methods. Ultrasonic inspection is a NDT method in which beams of ultrasound that are introduced into the material being inspected are used to detect surface and subsurface discontinuities. Non destructive test is the testing of materials to detect internal and surface defects or discontinuities using methods that do not damage or destroy the material under test. This report also given overview on advantages and limitation in the DT (Destructive testing)

The objective of this project is to determine the defect at the welding "samples by using the ultrasonic inspection. The presence of surface defects were inspected by using liquid penetrant testing and there are no defects detected.

The welded samples used in the inspection comprised of single vee-butt joints, but using different size of electrode these samples prepared by using the Shielded Metal Arc Welding (SMAW) techniques.

There are no surface defects detected when samples were inspected by using liquid penetrant method. On the other hand, defect such as porosity and slag inclusions were detected when both samples have inspected using ultrasonic inspection method.(kraitkramer's USK-7B).

Porosity, which were caused by, trapped gases. Porosity are scattered along the weld in line

Slag inclusion form due to foreign materials trapped in the cooled weld metal, during the welding process.

From the results and observations made during this project, the tested samples or parts can be reused (unless proven defective). The inspection also can be conducted to all samples or representative samples. More than one inspection method can be applied to similar object. The presence of defects can be detected and the thickness of the samples can be measured. Detecting defects is very important to the engineering systems or component because it may avoid major failure which may cause accidents to take place.