THE EFFECT OF RADIOGRAPHIC FILM PROCESSING ON THE RADIOGRAPHIC QUALITY IN NDT

by

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ABSTRACT

Radiography is one of the NDT methods that is always being used for defects detection in many materials. Since in this method, films are used as permanent information or as a recorded results, hence films have to be processed carefully and effectively. The purpose of this study is to compare the quality of film between manual and automatic film processing and also to prove that the recommended time of film developing through manual processing is the best time to be used. From the results obtained, its show that manual processing is the best technique to be used rather than automatic processing and the time of developing should be maintained as recommended.

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CHAPTER 1

INTRODUCTION

One definition of non-destructive testing is that which was ratified in 1963 at the 4th International Conference by the Standing committee for International Co-operation within the field of Non-destructive Testing and states:

' Non-destructive testing shall be taken to cover the inspection and/or testing of any material, component or assembly by means which do not affect its ultimate service ability. In the present state of knowledge the following techniques are included:

(a) radiography and fluoroscopy by X-rays; gamma-rays and neutrons;
(b) X-ray diffraction, X-ray crystal analysis;
(c) electron diffraction;
(d) X-ray spectroscopy;
(e) ultrasonic methods;
(f) eddy current methods;
(g) electrical and thermal conductivity tests;
(h) the use of surface penetrants; and
(i) the use of magnetic tests.

This list is not intended to be exclusive but indicative of the nature of tests involved.'

Non-destructive testing is not limited to the detection of flaws in materials; this is one of its important functions and there are many others not only of equal important but possibly of even more significance and of greater potentiality. In order to ensure that the desired degree of quality has been attained in an end-product, it is essential to establish that the mechanical, physical and chemical properties of the materials are to the contract and/or specification requirement; that the properties of the materials do not change or vary to a degree which would adversely affect their performance under differing