ABSTRACTS OF IIW DOCUMENTS

DOC-V-1035-94

TOPIC :
Characterization of black light equipment

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Check on the qualitative characteristics of products and equipment used for nondestructive testing by penetrants and magnetic particles has become important to assure test process sensitivity and inspection reliability Fundamental characteristics of Black Light Lamps are very important to assure that equipment should be safe for users, reliable for examination and stable for a long time.

This document is in two parts. The first part describes the results obtained during a series of experiments aimed at verifying important parameters of Black Light Lamps. The second part deals with procedures that should be used to characterize Black Light Equipment. Experiments in determining the visible-Light level, distribution of Black Light Beem. UV-A Light level, Thermal effects on Black Lamps voltage fluctuations effect on the Black Lamp, While light intensity effects etc. were conducted.

The results obtained proved that it was impossible to compensate for excessive White Light levels present on the surface under test by using higher UV irradiance levels. To improve test reliability, it is preferable to use lower UV irradiance but well distributed on the surface, rather than higher Black Light Levels.

It was found that the UV radiation levels between 1500 W/Cm^2 and 3000 W/Cm^2 produced be best levels of detectability for small defects and that vaves higher than 5000 W/Cw^2 should not be used at any time. If these levels exceed it reduces the initial contrast level. There was also a substantial difference in the detectability of the fluorescent indications when the operators were physically present in the darkened room compared to the situation where the operators had background white light illumination when using an inspection cabinet, maintaining the same UV irradiance and visible light levels on the test surface.

DOC V-1036-94

TOPIC :
Technical Evaluation of Black Light equipment for Manual application in Welding

This document describes the general procedure which shall be used to verify the most important operating parameters of Black Light Equipment. It deals with definition of visible light, ultraviolet Radiation, contrast ratio, Luxmeter Radiometer, Standardized switching cycles Mention is made, about safety precautions, units of measurement used, and irradiance classification. Effective and efficient evaluation of Black light equipment can be achieved taking into account general requiirements type of filters used characteristics of black light beem, UV-A irradiance level, thermal requirements of Black Lamps, voltage fluctuation etc.

DOC V-1034-94

TOPIC :
The Status of NDT Technology used for Welded Structures in CHINA

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This document gives some ideas about the state of the art of NDT for inspection of welded structures in China. Nearly eighty thousand qualified NDT persons are working in QA systems for varieties of welded structures like pressure vessels, ship hulls, offshore structures pipelines and other constructions More than 3000 organisations use NDT methods to check their products - Hundreds of manufacturers are there to deliver all kinds of NDT equipments to their users Three societies and five journals deal with NDT information exchanges

The document deals with research achievements ultrasonic testing of nozzel welds, use of ultrasonic focussed probes, development of expert system in radiographic testing, applications of linear electron accelerator, standardization and certification process, etc.

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