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Next Introduction to Magnetic Particle Inspection

Examples of Visible Dry Magnetic Particle Indications

One of the advantages that a magnetic particle inspection has over some of the other nondestructive evaluation methods is that flaw indications generally resemble the actual flaw. This is not the case with NDT methods such as <u>ultrasonic</u> and <u>eddy current</u> inspection, where an electronic signal must be interpreted. When magnetic particle inspection is used, cracks on the surface of the part appear as sharp lines that follow the path of the crack. Flaws that exist below the surface of the part are less defined and more difficult to detect. Below are some examples of magnetic particle indications produced using dry particles.



Indication of a crack in a saw blade

Introduction

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Physics

Magnetism Magnetic Mat'ls Magnetic Domains Magnetic Fields Electromag. Fields Field From a Coil Mag Properties Hysteresis Loop Permeability Field Orientation Magnetization of Mat'ls Magnetizing Current Longitudinal Mag Fields Circular Mag Fields Demagnetization Measuring Mag Fields

Equipment & Materials

Portable Equipment
Stationary Equipment
Multidirectional Equipment
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Field Strength Indicators
Magnetic Particles
Suspension Liquids

Testing Practices

Dry Particles
Wet Suspension
Magnetic Rubber
Continuous & Residual Mag
Field Direction & Intensity
L/D Ratio

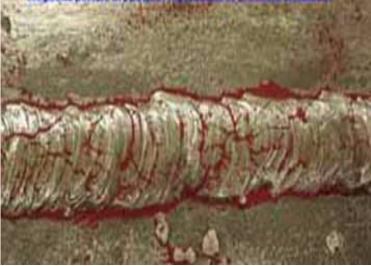
Process Control

Particle Concentration
Suspension Contamination
Electrical System
Lighting
Eye Considerations

Example Indications Visible Dry Powder Fluorescent Wet

Quizzes

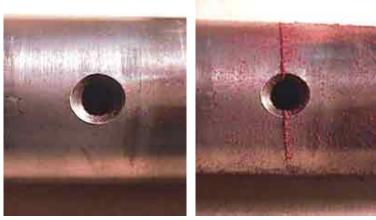
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Indication of cracks in a weldment



Indication of cracks originating at a fastener hole



Before and after inspection pictures of cracks emanating from a hole

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Indication of cracks running between attachment holes in a hinge

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