PRODUCT INFORMATION
Equipment

Magnetic field indicator type A and type G

TYPE A (II, Aerospace) and TYPE G (I, General)
For verification of field strength and field direction during magnetic particle testing

Structure

Both types are 50 mm long, 12 mm wide and rounded at the ends with a radius of 25.4 mm. They each consist of three layers with a total thickness of 0.15 mm. The middle layer (0.05 mm) consists of a magnetically soft Ni-Fe alloy with high relative permeability. The outer layers (0.05 mm) are made of non-magnetisable magnetisable material.

A special feature of these test specimens is that the middle layer of the 42 mm in length parallel to the long side, which are evenly distributed across the width. distributed evenly across the width. They run through the entire cross-section, but are of different of different widths.

Differences

- Colour
- Slot width
- Display sensitivity
- Designated application area

Technical changes reserved!

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MR® CHEMIE
NDT-MATERIALS

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Application and significance

Magnetic field indicators are primarily used to detect the field direction. In special cases, it is also possible to estimate the magnetic field strength at the surface of the test object. of the test object is possible.

<u>According to the manufacturer, this applies when</u>

- Current flow methods with alternating current (50-60Hz) are used
- The magnetising current is switched on (active field)
- The duration of the spraying with magnetic powder suspension (with active field) is at least 5 sec.
- The magnetic field indicators are mounted on a vertical test plane and aligned transversely to the direction of magnetisation.

<u>As a guideline value for the level of the magnetic field strength, the following applies under these conditions:</u>

For type I (G) : >2400 A/m, if all three lines are detectable
For type II (A) : >6400 A/m, if all three lines are detectable

In the case of horizontal application of magnetic field indicators, such estimates are not possible. possible. Neither is it possible with the following magnetising devices or techniques techniques:

- Enclosing coils
- Field flooding
- Yoke magnetisation
- Induction magnetisation
- Central conductor magnetisation
- Contacting conductor
- Permanent magnets
- With these methods, the magnetic field is generated outside the test piece and transferred to it. The magnetic field in the air then causes indications on the magnetic field indicators regardless of whether a ferromagnetic test object is present or not.

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he sole use of the magnetic field indicators for the verification of field strength and direction is therefore generally not sufficient. It is recommended that the field strength field strength required for the test with a field strength meter with a Hall-effect sensor and sensor and to check compliance with the selected magnetisation criteria with the magnetic field magnetic field indicators.

The use of magnetic field indicators is very common in the testing of oil field pipes made of high-strength materials in remanence using dry powder. dry powder. The indication is formed without the presence of an external magnetic field by the separation of field lines from the test object alone.

This mechanism also applies in the case of current flow with alternating current and vertical arrangement of the magnetic field indicators, whereby an external magnetic field is additionally is superimposed.

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