ASTM E709-80 Standard Practice For Magnetic Particle Examination

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Description

This recommended practice describes techniques for both dry and wet magnetic particle examination, a nondestructive methos for detecting cracks and other discontinuities at or near the surface in ferromagnetic materials.

Scope

This recommended practice describes techniques for both dry and wet magnetic particle examination, a nondestructive method for detecting cracks and other discontinuities at or near the surface in ferromagnetic materials. This recommended practice will produce repeatable results, precise enough to use as a basis for the preparation ofstandards. Magnetic particle examination may be applied to raw material, semifinished material (billets, blooms, castings, and forgings), fmished material, and welds, regardless of heat treatment or lack thereof. It is useful for preventive maintainance examination.

This recommended practice is also a reference that 'may be used as follows:

- To establish a means by which magnetic particle examination, procedures recommended or required by individual organizations, can be reviewed to evaluate their applicability and completeness.
- To aid in the organization of the facilities and personnel concerned in magnetic particle examination.
- To aid in the preparation of procedures dealing with the examination of materials and parts.

This recommended practice describes magnetic particle examination techniques that are recommended for a great variety of sizes and shapes of ferromagnetic materials and widely varying examination requirements. Since there are many acceptable

differences in both procedure and technique, the explicit requirements should be covered by a written procedure (see Section 19).

This recommended practice does not indicate, suggest, or specify acceptance standards for parts examined by these methods. It should be pointed out, however, that after indications have been produced, they must be interpreted or classified and then evaluated. For this purpose there should be a separate code, specification, or a specific agreement to define the type, size, location, degree of alignment and spacing, area concentration, and orientation of indications that are unacceptable in a specific part versus those which need not be removed before part acceptance. Conditions where rework or repair are not permitted should be specified.

This recommended practice describes the use of the following magnetic particle method techniques:

- Dry powder (see 6.1),
- Wet magnetic particle (see 6.2),
- Wet slurry/paint magnetic particle (see 6.3), and
- Polymer magnetic particle (see 6.4).

This resource is cited by:

ASTM E709-80 Standard Practice For Magnetic Particle Examination

This document is CITED BY:

- API STD 1104-1988 (17th Edition)

  ASTM E709-80 is cited by API STD 1104-1988 Welding of pipelines and related facilities

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