

CONVENTIONAL INSPECTION TECHNOLOGY

Magnetic Particle

MT detects surface and near-surface imperfections such as cracks, seams and laps in ferromagnetic materials, and is used to assess location, size, shape and extent of these imperfections.

When the test object is magnetized, flaws perpendicular to the magnetic field direction cause flux leakage.

Magnetic particles applied to the surface are held at the location of the imperfection by flux leakage. In this magnetic particle testing technique, dry particles are dusted onto the surface of the test object as the item is magnetized.

Dry particle inspection is well suited for the inspections conducted on rough surfaces. When an electromagnetic yoke is used, the AC or half wave DC current creates a pulsating magnetic field that provides mobility to the powder.

The primary applications for dry powders are unground welds and rough as-cast surfaces.

Dry particle inspection is also used to detect shallow subsurface cracks. Dry particles with half wave DC is the best approach when inspecting for lack of root penetration in welds of thin materials.

Half wave DC with prods and dry particles is commonly used when inspecting large castings for hot tears and cracks.

