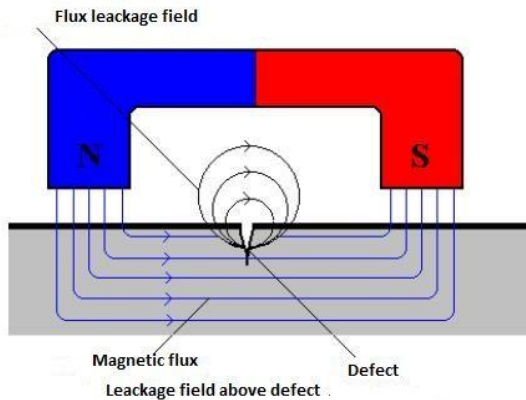


MAGNETIC PARTICLE TESTING (MT)



Magnetic particle inspection (MPI) is a crucial nondestructive testing (NDT) method widely used across industries like aerospace, automotive, oil & gas, welding, and power generation. It's efficient and cost-effective, identifying surface and subsurface defects in ferromagnetic materials without causing harm to the parts. By applying magnetic particles and magnetization, MPI reveals defects that can then be assessed for acceptance, rejection, or repair, ensuring the integrity of critical components in various applications.



Magnetic particle testing (MPT) offers numerous advantages, including its versatility for use on stationary and mobile components, direct surface defect detection, ease of application, speed, reliability, and immediate results. It also uses portable and cost-effective equipment, making it a preferred choice. However, MPT has limitations such as restricted access for magnetizing tools, applicability only to ferromagnetic materials, the need for calibration without permanent records, alignment requirements for accurate results, post-inspection cleaning and demagnetization, and constraints on inspecting large parts or sections covered with thick paints.

Industry standards play a crucial role in Magnetic Particle Testing (MPT) by ensuring adherence to principles, safety measures, and process consistency.

ASME Section V: Nondestructive Examination is a primary reference for MPT methods, although several other codes and standards also offer guidance on test procedures.

(ASTM E1444, ASTM E 709, ISO 9934 etc.)