

When does MT have an advantage over PT, UT or RT?

Magnetic Particle Testing (MT)

Method	Materials	Target flaw	Main advantage	Main limitation
MT	Ferromagnetic only	Surface and near-surface	Fast, sensitive to cracks	Strong orientation dependence
PT	Most nonporous materials	Surface-breaking only	Simple and independent of magnetism	Surface must be clean and nonporous.
UT	Many metals	Volumetric and planar	Depth and position information	Coupling, geometry and skill requirements
RT	Broad material range	Volumetric and thickness change	Recorded image	Radiation, access and directional sensitivity

Source / basis: <https://niktrd.com/magnetic-particle-testing>