NON-DESTRUCTIVE MAGNETIC TESTING OF WIRE ROPES (MRT)

Magnetic Rope Testing (MRT) is the method of applying a magnetic field to a wire rope and converting data to a useable form of measurement. This allows to detect, evaluate and monitor the condition of a wire rope.

Magnetic ropes testing is carried out together with visual rope inspection and is used to ensure safe operation of ropes in service.

Wire rope has usually no redundancy so a single failure can have major consequences. MRT testing of wire ropes allows to monitor process of wire rope deterioration and predict remaining service life.

Typical wire rope problems include:

Abrasion
Abrasion damage may occur when the rope contacts an abrasive medium or simply when it passes over the drum and sheaves.

Diameter Reduction
Diameter reduction is a critical deterioration factor and can be caused by:
- Excessive abrasion of the outside wires
- Loss of core diameter/support
- Internal or external corrosion damage
- Inner wire failure
- A lengthening of rope

Corrosion
Corrosion can occur internally or externally. Rusting usually indicates a need for lubrication. If this condition persists, it will lead to severe corrosion which promotes premature fatigue failures in the wires and strands, resulting in rope’s shorter service life.
Ø30 - Ø90mm Wire Rope Test Head

Test head is source of measurement signals for magnetic inspection of the steel wire ropes. Head guides can be adjusted to requested diameter within head range without additional equipment. Recorded head signals indicate rope defects such as wire breaks, pitting corrosion, and also distributed rope steel cross-section reduction. The analysis of the head generated signals makes possible determining the rope cross-section reduction rate as well as the length and depth of the defected section of the rope.

Specifications:
Size range of wire ropes: Ø30 - Ø90mm
Cross sectional area of steel up to 4700mm²
Overall dimensions: 250x240x820
Weight of the test head: 60kg