MRT – Magnetic Rope Testing

From towering cranes lifting heavy loads to cable cars transporting passengers through breathtaking landscapes, cables play a crucial role in numerous industries. However, worn and damaged cables pose a significant safety risk, with potentially catastrophic consequences.
While visual inspections are essential, they often miss crucial internal wear and tear, leaving people and production vulnerable to unexpected failures. Thanks to Magnetic Rope Testing (MRT), there is now an innovative solution for reliable and comprehensive cable inspection.
Magnetic Rope Testing (MRT) is a non-destructive testing (NDT) technique that uses the power of magnetism to detect internal and external defects in cables. By fully magnetizing the cable section, MRT creates a uniform magnetic field that is then used to detect defects.

Your tailor-made solution

How does Magnetic Rope Testing work?
Principle: MRT is based on the principles of magnetic flux leakage (MFL). When a ferromagnetic material, such as a wire rope, is magnetised, the magnetic field flows along the length of the material. However, when a fault (such as corrosion or a crack) is present in the material, the magnetic field leaks out of the material at the site of the fault.
Equipment: The MRT inspection equipment consists of a magnetising unit, a sensor array and a data collection system. The magnetising unit generates a magnetic field that magnetises the cable. The probe or sensor array is then used to detect magnetic flux leakage from the surface of the cable.
Inspection process: During inspection, the magnetising unit is clamped around the cable and the cable is magnetised. The probe or sensor array is then either moved along the length of the cable or the cable is moved by the sensor array. Changes in the magnetic field caused by leakage are detected.
Data analysis: the data collected by the sensor array is analysed to identify any indications of faults or defects in the cable. Changes in the strength or pattern of the magnetic field may indicate the presence of defects such as corrosion, wear or broken wires.
Interpretation: Trained inspectors interpret the data to determine the severity and location of any detected faults. This information helps asset owners make informed decisions about the condition of their wire cables and whether any maintenance or replacement is needed.

Your result

What are the advantages of Magnetic Rope Testing (MRT)?

Please note

Conditions to ensure reliable results:

In which situation?

MRT (Magnetic Rope Testing) is the ideal solution for cable inspection of the following:
- C*onstruction sector*: tower cranes, mobile cranes
- *Mining & quarrying*: lifting systems and transport equipment
- *Oil & gas*: offshore platforms, drilling rigs, flare pipes
- M*aritime and shipping*: shipboard cranes, winches harbour cranes
- *Storage and material handling*: Conveyor systems, hoists and other material handling equipment in warehouses and production plants using steel wire rope
- *Energy sector*: winches for wind turbines, polar cranes, turbine hoists and lifts

- *Infrastructure*: Suspension and cable bridges, cable cars, skywalks and pedestrian bridges, ski lifts, transmission towers, roller coasters, Ferris wheels, freefall towers, ziplines