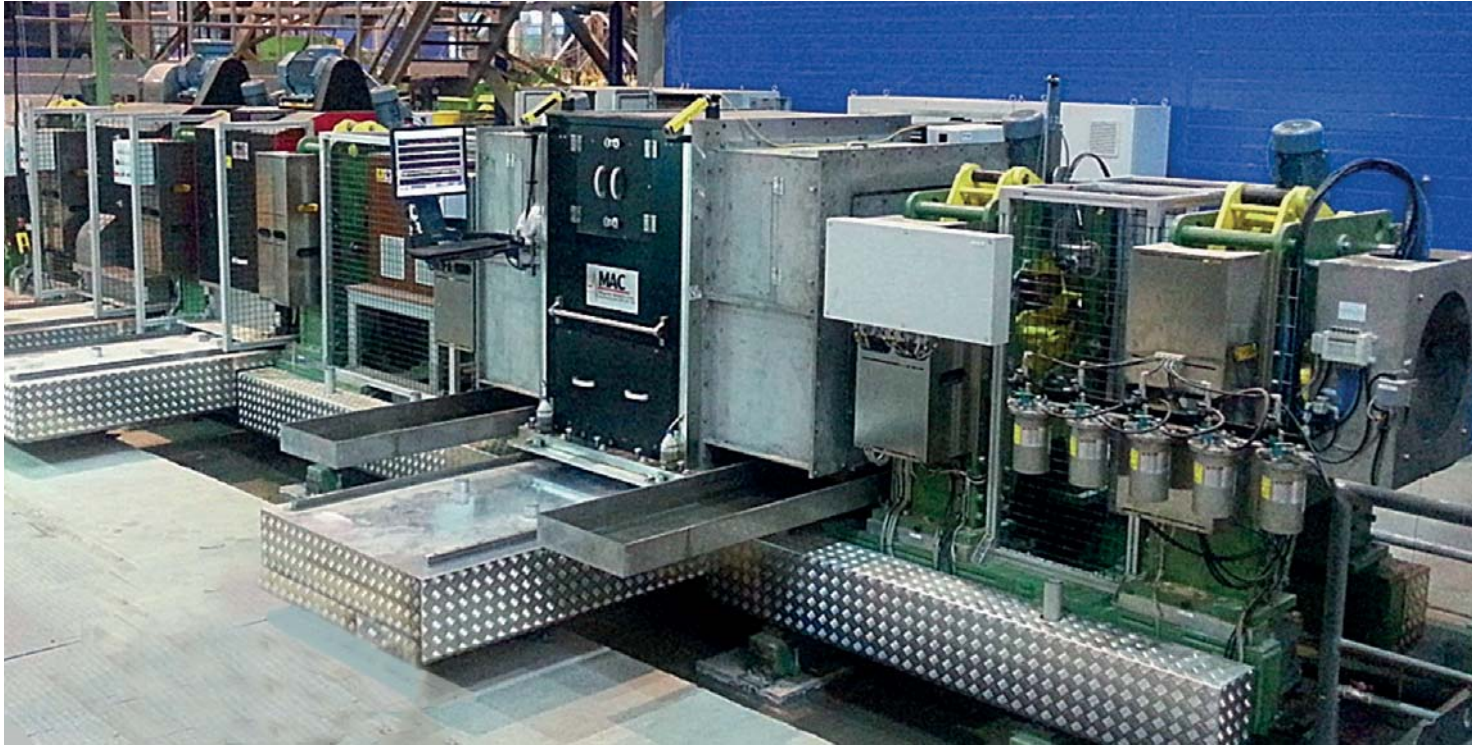


Meeting standards for testing large OCTG tube and pipe



Magnetic Analysis Corp. (MAC) has recently supplied a test system to a Russian mill to inspect tube and pipe, up to 500mm (19.6") diameter. The system features MAC'S largest ever Echomac® Ultrasonic Rotary tester combined with 500mm Rotoflux® Transverse and Longitudinal testers. The result of the combined ultrasonic/flux leakage test technologies is a system that is compliant with API 5CT and 5L, ASTM E570 and other standards, including those that require Ultrasonic testing as the first method and a second test method at the discretion of the pipe producer.

MAC's new 500mm UT tester can detect longitudinal and transverse crack type defects on OD and ID pipe surfaces, and throughout the product's cross section, meeting standards that require finding artificial notches at a 5% or 10% level of the wall in pipe. Many pipe grades require

that the producer monitor the wall thickness for variations in dimensions, and some quality levels also require checking for lamination conditions. Grade PSL3 is the highest quality level and PSL2 and PSL3 both require being able to find a 6.3mm diameter flat bottom drilled hole (FBDH) when testing for lamination. Test coverage is another standard, with Level PSL2 requiring test coverage of greater than 25% of the pipe volume, and PSL3 requiring 100% coverage. Enough transducers must be used so the helical pattern, created by the sensors as they scan the pipe's circumference, covers the required percentage of the pipe volume. Generally, wall thickness measurement could be conducted at the 25% level, while lamination detection would need the 100% coverage level. These high level quality grades are most likely to be required for pipe destined for high risk offshore or environmentally sensitive

Multi-test Ultrasonic/Flux Leakage system from MAC for a Russian pipe mill. The Echomac® 500mm Ultrasonic Rotary is shown in the center. The Rotoflux® 500mm Flux Leakage Transverse & Longitudinal testers are down the line to the left.

applications. The Echomac UT test system, which also features MAC's wireless transmission of test signals, can handle these tasks and ensure compliance with industry standards at throughput speeds up to 1m/s.

The 500mm Transverse and Longitudinal Rotoflux® flux leakage testers can test to 10% OD and ID notch levels up to approximately 14mm wall thickness and 5% OD and ID levels for thickness up to 12mm. The Ultrasonic technology provides critical full inspection capability, including shear wave inspection of longitudinal and transverse defects at any quality level and wall thickness measurement and lamination detection. The addition of the UT rotary to the magnetic flux leakage testers provides complete all-direction

test capability and gives the user full flexibility to optimize the pipe inspection process. Together, the dual technologies (UT and Flux Leakage) provide a far more comprehensive test.

Magnetic Analysis Corp., based in Elmsford, New York, US, with additional manufacturing facilities in Boardman, Ohio, US, and Östersund, Sweden, has been designing and manufacturing nondestructive test equipment for the metals industry since 1928.

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