

MAGNETIC PHASE MONITORING IN STEEL PRODUCTION AND QUALITY CONTROL

Determining magnetic phase content in steel is complex and slow with microscopy. KOERZIMAT 1.097 MS delivers fast, geometry-independent results.



THE CHALLENGE

Steel products often contain multiple phases such as ferrite, martensite and austenite, which directly influence mechanical properties. Precise determination of magnetic phase content is essential for quality control, especially after heat treatment or cold working. Conventional microscopy or X-ray methods are complex and time-consuming, requiring faster production-oriented alternatives.

THE SOLUTION

Magnetic phase monitoring is performed using the KOERZIMAT 1.097 MS system in accordance with IEC 60404-14. Based on the saturation polarization (SP) method, the system determines the proportion of ferromagnetic phases via measurement of the weight-specific magnetic dipole moment. The integral method requires no specimen preparation and is geometry-independent.



THE RESULT

The solution enables fast and precise quantification of magnetic phases during production and incoming inspection. Differences between ferromagnetic phases and paramagnetic austenite can be clearly distinguished. Reliable SP-based evaluation supports stable process control and consistent mechanical properties of stainless and alloyed steels

THE PRODUCTS

KOERZIMAT 1.097 MS

Systems for measuring the saturation polarization σ_s and J_s



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