Magnetic particle testing
For yankee dryer shells

Fluorescent magnetic particle testing - MT - is the best available method for detecting surface and near-surface discontinuities in such magnetic materials as ferritic steel and cast iron.

Benefits

Valmet’s inspection program provides the following benefits:
- Professional evaluation of abnormalities and test findings facilitate appropriate corrective measures
- Quick and accurate application results in minimal downtime
- Continued operational safety of your Yankee dryer shell

Objective

Fluorescent magnetic particle testing is the fastest way to detect surface defects. When sprayed with magnetic particles and illuminated with ultraviolet light, surface cracks glow bright green and are clearly visible against the darker background.

Cracks may start from inclusions, plugs or accidental damage, and their severity needs to always be evaluated. Valmet has the tools and knowledge to analyze such defects in a manner that facilitates appropriate corrective measures.

Valmet’s unique method utilizes a crossyoke on wheels, which enables measuring the Yankee dryer shell surface while rotating. This method is both faster and more accurate than manual testing with a single yoke.

Valmet’s Yankee service team possesses extensive related experience and utilizes custom tools for maximal efficiency and minimal cost and downtime.

Requirements

Approximate testing time
- Ø 12 ft x 5m Yankee < 4 h
- Ø 15 ft x 5m Yankee < 5 h
- Ø 18 ft x 5m Yankee < 6 h

Testing conditions
- Yankee speed ~ 1 rpm
- Maximum surface temperature < 50 °C
- Surface free of oil and dirt
- Access to the shell at the doctor blade

Surface crack and plugs - undetectable without the MT method