BROKEN ROLL DETECTION ON RED-HOT STEEL PIPES

THERMOGRAPHY RECOGNIZES FAILUREPRINTS AND REDUCES WASTE

At the production of seamless steel pipes there may occure periodically failure marks. This „bumps“ are caused for example by a broken roller or adherent material. Result is in any of these cases a recurrent failure imprint alonge the whole pipe length or for more than one pipes.

Our Solution

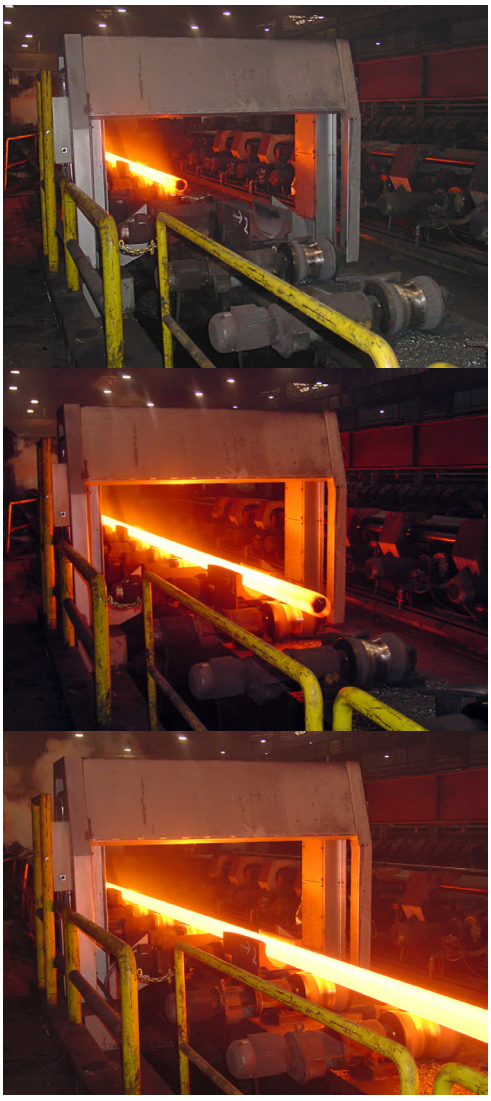
The broken roll detection system provides automated failure warning at an early stage and allows rapidly intervention to production. At the end of the push bench with its roller stands the pipe is red-hot and cools down against the ambient. Thus heat flows from inside the pipe to the outside. Structural defects within the pipe wall and surface defects show distinguishable temperature patterns which can be identified and evaluated by using thermal imaging.

Technical Data

- pipe length: typically 20m
- pipe diameter: up to 170mm
- pipe transportation speed: typically 6.6m/sec
- pipe temperature higher than 850°C
- dimensioning outside the specified parameter also possible

Your Benefits

- roller defect identified immediately (about 10m) after the push bench
- fully automatic inline-failure-detection of structural voids and so called „adherences“
- 3 cameras in water cooled housings inspects 100 percent of pipe surface
- cost optimisation through wavelength „shift“
- automatic position correction (adjustment of radial run outs through pipe transport)
- 3 evaluation PCs for inline calculation (approx. 600MB/pipe)
- sucessfully installed in steel industry since 2004



Broken roll detection system: the broken roll detection system inspects the whole pipe surface at a temperature of up to 1000°C and at a speed 6.6m/s. Thus product defects are verified and documented.

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