Laser beam welding of large-diameter pipes

In co-operation between Europipe GmbH and SLV Halle GmbH, the integration of laser welding equipment in a spiral pipe welding machine was studied. The integration was field-tested in an industrial environment.

System concept
According to the system concept, the pipes were welded with two laser sources. The results show that the laser is a suitable tool for this manufacturing process.

- External welding head for capping
- Internal welding head for inner weld
- Bending beams as one of the core pieces in pipe forming

Performance of test
The subject of the test was the optimized matching of pipe spheroidization and laser beam welding process, on the one hand, and the evaluation of the result of welding by extensive materials testing, on the other.
In-process assessment

Simulation of an in-process-assessment of the weld quality

On-line monitoring of weld quality by plasma and temperature signals

In-process ultrasonic testing of the weld

Ready machined pipe with a minimum of follow-up testing

Technological studies using pipes of different thickness

6 mm 8 mm 10 mm

Technological studies

In co-operation with

EUROPIPE

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