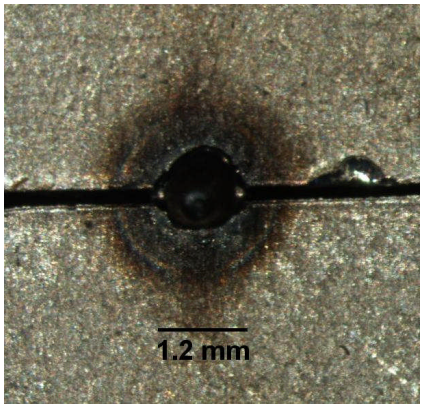
Objective

Fontijne Grotnes b.v. manufactures production lines for steel wheels. Part of this line comprises of stations where steel plate is coiled, flattened and transported to the butt weld machine. During this transportation the open ring is aligned and positioned correctly in the weld machine. To reduce costs a concept change was proposed in which the open rings are aligned and fixed during flattening. Transportation to the butt weld machine can than be done by a simple transportation installation.



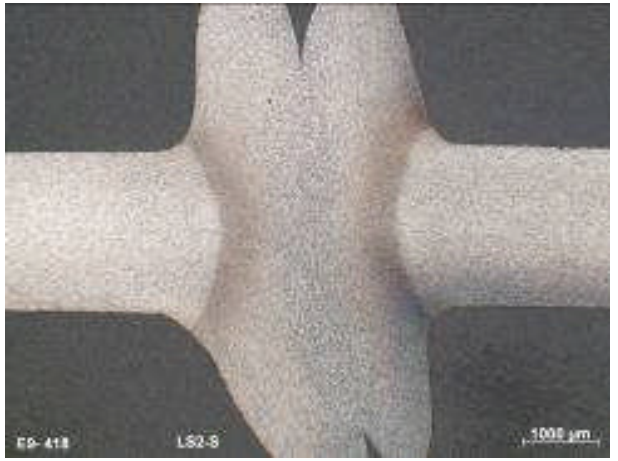
Laser welding

Research topics

- Minimization of weld size and depth.
- Welding processes to be tested: Laser (spot) weld, TIG (spot) weld, and resistance spot weld.
- Necessary weld strength for this application.
- Quality of butt weld after spot welding.

Industrial benefits

- Fixing both ends by using laser and/or TIG spot welds showed to be possible and does not harm the butt welding process thereafter.
- A costly loading system can now be replaced by a simpler system. Cost savings of approximately 30% for the section between the coiler and the welding machine (coiler, flattener, and loader) can be obtained. This section costs about 50% of the total cost of the installation.



Laser tack weld & RUW cross section