Welding Laboratory

Principal goals and activities

- Analysis of arc and resistance welding processes.
- Study of welding parameters influence on the resulting properties of the weld.
- Realization of test weld seams for the determination of input parameters for numerical simulation in SYSWELD software.

Specific instruments and outcomes

- Navigator 3000, Migatronic welding machine.
- BDH 550 PulSync, Migatronic welding machine.
- Migatronic Zeta plasma cutter.
- Linear welding track for mechanized welding using methods as per ISO 4063-13.
- Welding station for mechanized welding using methods as per ISO 4063-14 with the possibility of preheating the parrent material.
- Desk positioning stand.
- Elsklo laboratory furnace.
- WeldMonitor monitoring system.
- Welding jigs and fixtures.
- WBLP 40 welding machine.
- TECNA 6124 welding machine.
- MG3Digital, Myiachi metering instrument.
- MM 365-B, Myiachi metering instrument.
- M524 digital oscilloscope.

General focus of laboratory

- Monitoring of welding processes.
- Analysis of process parameters in arc welding methods.
- Analysis of process parameters of resistance welding with focus on spot welding.

Offer of technology and expertise

- Influence of welding parameters on the character of metal transfer and the welding seam geometry.
- Life expectancy tests of bars in resistance spot welding.
- Determination of suitable welding parameters zone for resistance spot welding.
- Failure mode analysis in welding seams.
- Optimization of welding processes.
- Measurement of temperature cycles in arc welding processes.
- Determination of input data for numerical simulations.
- Training/seminars on topics: „Materials and their welding performance“, „Welding equipment and fixtures“, „Quality management systems in welding“, „Technology procedures of welding“, etc.