



## Hot Pulse Welding

AZZ | WSI's Hot Pulse welding is particularly suited for joint welding and piping system fabrication, component replacement, heavy wall section joints and the joining of high alloy materials. By adapting Hot Pulse Wire™ (HPW) technology to a GTAW welding process coupled with machine control, AZZ | WSI has created significant benefits when access constraints or high pre-heat temperatures increase the safety or production risk to craft personnel.

The process has been field proven in many applications involving:

- High energy pipe replacement
- Heavy wall, high preheat pressure vessel repairs
- Space constrained, high alloy heater U-Bend replacements
- Welding scopes involving austenitic, high Cr and Nickel Alloy materials

AZZ | WSI's patent-pending HPW technology couples a unique method of creating transitional oscillation in the wire at a frequency that is synchronized to the wire feed and travel speed of the weld. Feeding the weld puddle in this manner affects the behavior of the puddle and results in higher quality and productivity with:

- Reduced surface tension for better wetting and flow characteristics
- Puddle agitation for ultimate out-gassing (reduced propensity to porosity)
- Low turbulent mixing to minimize dilution

All of these benefits are provided without any significant changes to existing welding equipment and no required changes to approved WPS/PQR documentation. With these attributes, the “new technology” risks are minimal.

Hot Pulse welding is just one more way that AZZ | WSI enhances the integration of various elements into an optimum, repair design, engineered solution. AZZ | WSI has the flexibility to choose the best welding process with beneficial process enhancements, coupled with the best performing filler alloy and joint design and integrate these elements into an advanced machine-tool system that is modified to meet the field-access constraints of your project. Every day, AZZ | WSI's field personnel are taking these sophisticated equipment systems to the field and expertly implementing these design repair solutions.