A study in strength: The pipeline welding process

The heart of Enbridge’s business is the pipe in the ground—and the craftsmanship that keeps it strong.

Enbridge uses the best available welding technology on our pipeline projects, like the Line 3 Replacement Program (L3RP). We go well beyond industry codes and standards, wherever we build our energy infrastructure, to ensure our weld joints—like our pipes—are strong, healthy and fit for purpose.

In the pipe mill: Seam welds

Enbridge’s L3RP supplier uses the Double Submerged Arc Welding (DSAW) process to assemble its pipe. This process is ideally suited to carbon-steel pipe, with high productivity rates, extremely low rejection rates, and quality results.

In the field: Girth welds

For Enbridge’s Line 3 Replacement Program, and other major projects, crews move steadily down the pipeline right-of-way joining sections of pipe together via a series of girth welds. While this process, known as Gas Metal Arc Welding (GMAW), is largely automated, welding machines are operated by skilled and qualified welders.

Tried and tested: The weld inspection process

In the mill

- Seam welds are inspected by the pipe manufacturer using automated ultrasonic or X-ray devices.
- Results are reviewed and audited by Enbridge inspectors.

In the field

- Girth welds are inspected by an independent third party, primarily using automated ultrasonic devices.
- Results are reviewed and audited by Enbridge inspectors.
- As an extra Enbridge safety measure, some girth welds are delay inspected for enhanced quality assurance.

Safety and reliability are built into Enbridge’s energy infrastructure projects—before, during and after the construction phase.

For more information on the Line 3 Replacement Program, please visit enbridge.com/line3