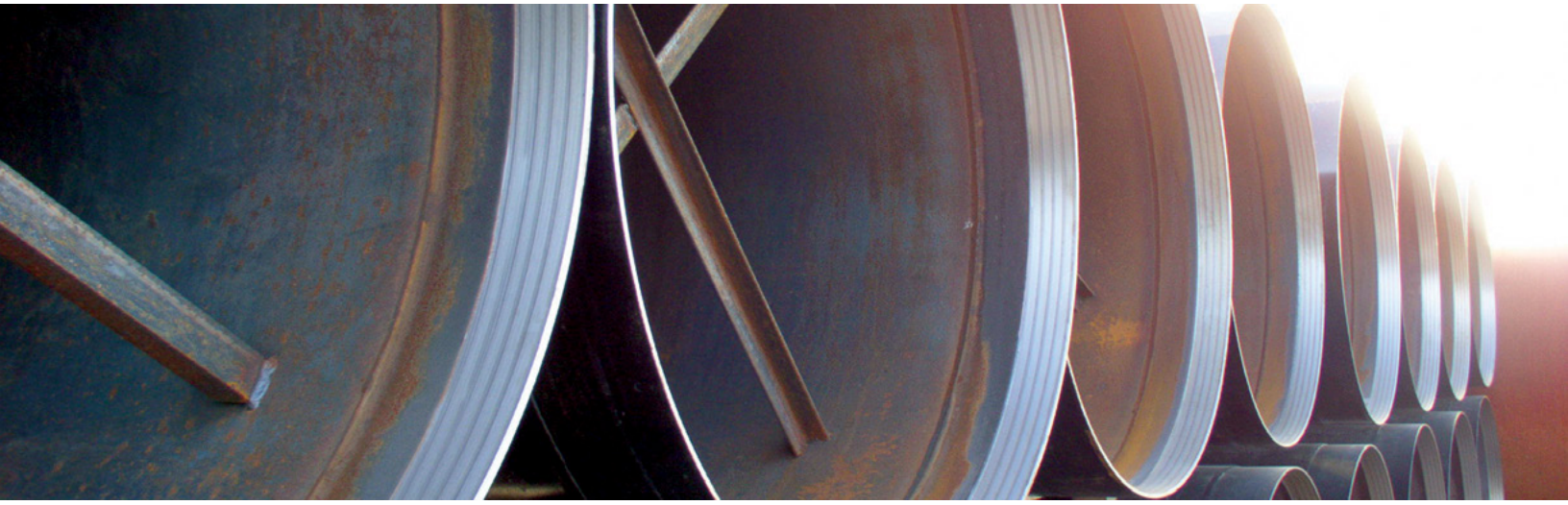
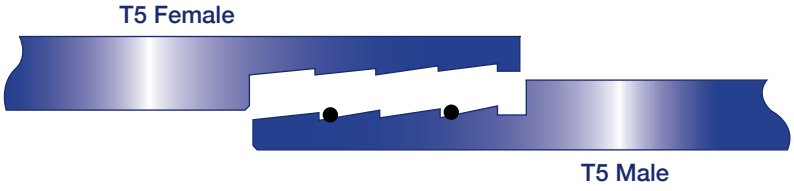
PERMALOK®
A Northwest Pipe Company

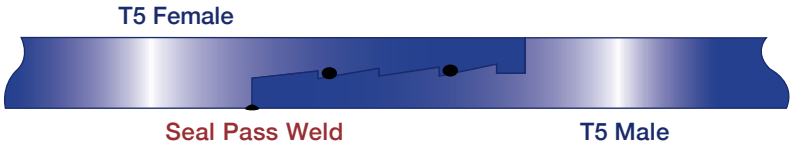


The T-7 Permalok® Joint

The Permalok® T-7 joint utilizes a precision machined interference fit similar to the T-5 joint, but incorporates two rubber o-ring gaskets. The pre-installed precision joint connection, which is flush with the interior and exterior surfaces of the pipe, quickly, easily, and permanently joins each piece of steel casing pipe on a project. Its unique stepped profile makes stabbing and aligning simple and expeditious.



A One-Pass system with the Permalok® T-7 joint is possible, eliminating the need for a casing pipe. The T-7 Permalok® pipe in this case serves as the carrier pipe, for low to medium pressure applications. Following installation typically by microtunneling, a 1/8-inch single-pass seal weld is applied at each of the joints where a pre-existing v-groove is chamfered at the joints from the manufacturing facility.



The T-7 Joint's unique profile is machined to tolerances of less than +/- 0.005 of an inch, which creates a joint of consistent quality and integrity.

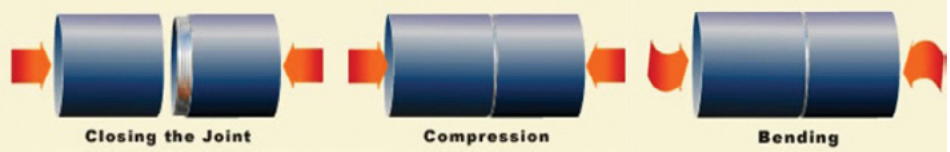
Loading

The T-7 Permalok® Joint is designed to handle various types of loading conditions that a casing pipe is likely to undergo in the field. Through many miles of proven installations, the joint has been proven to be suited in both compression and bending in applications involving:

- Microtunneling
- Pipe jacking
- Pipe ramming
- Auger boring

(over)

A 60-inch outside diameter Permalok Casing Pipe, with a wall thickness of 0.625-inch, will require approximately 40 to 60 tons of compressive force to complete the connection.



End Preparation, Mating Procedures, and Installation

Both ends (male and female) are coated at the factory with a wax-like rust inhibitor. This must be removed before attempting to make up the joints. Use of any type of petroleum based solvent and a stiff brush will dissolve the film. As steel pipe is never perfectly round, it is good practice to measure across the face of each male and female end to determine the maximum and minimum deviations from round, prior to placing the pipe for joint make-up. Match marking the pieces in this manner will aid and speed up the mating process in the work pit. A 24-inch Class 3 Permalok® pipe will require approximately 10 to 20 tons (20,000 – 40,000 lbs.) of compressive force to complete the connection.