



CURRENT
PIPELINE PRODUCTS™
A division of IMAC Systems, Inc.

MONOLITHIC ISOLATION JOINTS: WELDLESS DESIGN, A NEW DEVELOPMENT

by Nicholas Kohart, Executive Vice President

Executive Summary

The WELDLESS monolithic isolation joint, manufactured by ALFA Engineering, for Current Pipeline Products, eliminates all welds in the interior of the joint. This paper discusses the technology that enables greater monolithic isolation joint integrity.

WELDLESS MONOLITHIC ISOLATION JOINTS

The WELDLESS monolithic isolation joint addresses concerns voiced regarding critical service and large diameter isolation joint applications. The concept is straight forward, eliminate any welds in contact with pipeline flow. ALFA Engineering was able to leverage their engineering experience, in unison with metallurgists, and foundries, to create an innovative solution. Instead of welding pipe-pups to forging rings, ALFA Engineering created larger, unique shaped forgings. ALFA Engineering's large machinery, and technical expertise allows them to machine the larger forgings. The benefits are multi-fold.

- 1.) No welds in contact with pipeline flow
- 2.) 100% uniformity to all material
 - a. Traditional monolithic joints use pipe pups welded to forgings rings. By utilizing all forgings, the material properties and chemical properties are the same throughout the finished product.
- 3.) Eliminate pipe-pups
 - a. On larger joints or higher-grade materials, pipe-pups can be difficult to source. Utilizing forgings reduces lead times and reduces logistics costs associated with procuring scarce or hard to source pipe-pups.
 - b. Eliminating pipe pups negates the discussion of SMLS vs. Seamed and the additional costs of when PSL2 certified pipe is required for the pipe-pups.
- 4.) Eliminate misalignment problems between pipe-pups and forging rings
 - a. This problem is only evident on larger diameter joints, principally when pipe-pups arrive out of round. By using large forgings, no alignment is necessary and the end product is round for welding into place.
- 5.) Decreases the risk of defective welds

The absence of the two "wet" welds is a significant quality improvement for monolithic isolation joints used in critical applications. International standards for monolithic isolation joints recommended having the "minimum number of welds possible" and the WELDLESS design eliminates the two welds touching gas or fluid flow. This provides advantages like increased corrosion resistance, uniformity of material and the weight of final product. These advantages combine to deliver a longer lasting and more reliable insulation joint.



VS

