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EVALUATING THE SEALING PERFORMANCE OF ENGINEERED PTFE BASED GASKETS IN FIBERGLASS REINFORCED PLASTIC FLANGES

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ABSTRACT

Proper gasket selection for fiberglass reinforced plastic (FRP) flanges is critical to the longterm success of the pipe system. However, very little focus is placed on evaluating the performance of low stress-to-seal, PTFE-based gaskets engineered to perform at the lower bolt loads/gasket stresses allowable on FRP flanges. In cooperation with a premier FRP piping/equipment manufacturer, this paper evaluates and compares the sealing performance of new gasket technologies/designs and commercially available low stress-to-seal, PTFE-based gaskets. To quantify the relative performance, each gasket style was tested to ASTM D5421 "Standard Specification for Contact Molded "Fiberglass" (Glass-FiberReinforced Thermosetting Resin) Flanges". Gaskets that passed the ASTM D5421 testing were then subjected to a mass leakage test to further classify each gasket style's sealing/tightness performance. Given the current standard requirements, gaskets that did not pass the ASTM D5421 standard testing were determined not to be suitable for FRP service and thus were not subject to the subsequent mass leakage testing.

By comparing the collected data using these metrics, the final result of this paper will provide endusers with a comprehensive method of evaluating gasket styles and provide guidance for proper gasket selection for FRP flange services.

Key Words: Fiberglass Reinforced Plastic, PTFE Gaskets

