

# EVALUATING THE ABILITY OF COMPOSITE MATERIALS TO RESTORE MECHANICAL INTEGRITY TO PIPELINES HAVING WRINKLE BENDS

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## ABSTRACT

Concerns exist among the pipeline industry about the effects of wrinkle bends on the long-term integrity of pipelines. For this reason, a study was conducted to assess the relative severity of wrinkle bends present in a pipeline system. Included in this study was an evaluation in using composite materials to determine the potential for life extension considering the presence of reinforcement. Strain gages were installed on select samples to determine alternating stresses. The effects of metal loss due to corrosion were also considered. The experimental results demonstrated that composite materials can extend the fatigue life of wrinkle bends when designed and installed properly.

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