



Engineering Evaluation of the Armor Plate[®] Pipe Wrap Repair System



Armor Plate, Inc.

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ABSTRACT

This document presents the cumulative efforts of a two-year engineering evaluation of the Armor Plate Pipe Wrap Repair System. Armor Plate Pipe Wrap is designed as a method for repairing pipelines containing corrosion, dents and other forms of mechanical damage. The repair employs a fiberglass/epoxy system that is installed in a wet condition on pipelines and piping components. This lay-up condition permits the system to be installed on almost any piping configuration including piping elbows and tees.

Experimentation has been used to validate the repair method. This has included testing related to the following items,

- Burst testing of corroded pipes
- Fatigue testing of repaired pipes containing with dents and gouges
- Burst testing of corroded elbows and tees
- Material evaluation of composite and adhesive systems
- Evaluation of reinforcement provided to pipe by Armor Plate using strain gages
- Testing related to environmental issues such as cathodic disbondment

A handbook was also developed for specifying the required number of wraps for a given level of corrosion. This handbook is provided in **Appendix D** of the report. Provided in this cumulative report are the specific test methods and data acquired during the process of testing. For the Internet user, each chapter and appendix listed in the **Table of Contents** is provided as a separate *Adobe Acrobat pdf* file.

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