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Long-Term CIPP Performance and Its Design Implications

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ABSTRACT: Since cured-in-place pipe (CIPP) lining arrived in North America in the late 1970's, the technology has been an attractive alternative for rehabilitating pipes without the need for digging. However, the nature of CIPP is, in essence, a pipe manufactured below ground. And unlike pre-fabricated materials that have been through a series of long-term testing, below ground “manufacturing” introduces a host of variables (variable installation conditions, different installation methodologies, etc.) in the short and long-term reliability of CIPP as a pipe material. Contractors, engineers, and utility owners have generally accepted that CIPP has a 50-year design life and most CIPP designs assume that the long-term properties of the liners will retain 50% of their initial value.

But how do you know you're getting what you're paying for? What are the ways you can verify that your CIPP will last as long as it's supposed to?

This paper addresses the various ways to test and anticipate the long-term performance of CIPP liners and some options available to Owners and Engineers if test results are not as expected. Topics will include:

- Taking field samples
- The importance of various physical properties of the CIPP samples that will require verification
- Types of tests available (both ASTM and European standards) and the testing parameters
- Responsibility of testing and payment
- Test results as they factor into the design calculations
- Some methods of recourse by the Owner if test results are less than specified