

# Quality Control

## CIPP TESTING REMAINS ESSENTIAL TO INDUSTRY'S SUCCESS

BY RICK EASTWOOD

**T**esting — it's a word that has been met with some apprehension by many involved in the cured-in-place pipe (CIPP) over the years. However, testing is a critical function of the quality control process as it relates to the cured-in-place pipe industry.

With the inception of CIPP in North America in the 1970s, quality control and testing became based on testing by manufacturers for the pre-requisite approval of liner designs. As the technology gained acceptance by the pipe rehabilitation industry, there became an ever increasing amount of concern over verification of product installation and the projected design life of the material. It was determined that testing was critical to verify the structural integrity and the resistance to chemical substances contained within the liner.

Testing of CIPP liners is a useful and effective tool for installers, municipalities and engineers. Testing can provide information that will assist with the design strengths of a liner, long-term values of the product and provide a critical step in quality control process of a CIPP liner by determining if the liner meets ASTM strength minimums stated in ASTM F1216, F1743 and D2019.



### WHY TESTING?

Thus, an opportunity presented itself for testing of CIPP by independent third party testing laboratories using a variety of testing methods. Many laboratories took it upon themselves to begin conducting testing on CIPP materials. Certified laboratories go through a comprehensive accreditation process to achieve accreditation by the American Association for Laboratory Accreditation (A2LA), which meets ISO 17025 and ISO 9001 standards.

These accredited labs are called upon as an independent third-party to perform

a large number of tests on variety of lining materials — both cured laminates from the field, as well as the raw materials. These tests include liner thickness, water tightness, short-term flexural and tensile tests, long-term creep and chemical tests. Testing of materials is also a critical component in the development of new products.

One of these labs is HTS Pipe Consultants located in Houston. Established in 1979 by Tom Schultz and Larry McMichael, HTS was developed with plans to test a number of construction materials (concrete, soils, asphalts, etc.). However,

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in 1988, HTS began testing CIPP samples for projects with the City of Houston. This led to HTS becoming a recommended test lab for many contractors, engineering firms, municipalities and government agencies throughout the United States. As the popularity for testing has grown and expanded, HTS Pipe Consultants has increased the number of customers located in the United States, Canada, Mexico and Australia. To date, HTS has tested more than 50,000 samples over the years. From short-term flexural testing to long-term chemical testing, HTS has been in the forefront of CIPP testing in North America.

There are a number of reasons for the success of a test lab over the years. The most important has been the ability to perform the quality testing, as per ASTM standards, in a timely matter that enables the customers to expedite the continuity of the contract the material is being tested for. Secondly is the ability to address and overcome the revisions in ASTM standards. A third reason is the ability to work with customers on "hot button" items, such as liner thicknesses. Individuals who have been around the cured-in-place pipe industry may remember the thickness issues with CIPP samples for projects with the City of Houston during the early 1990s.

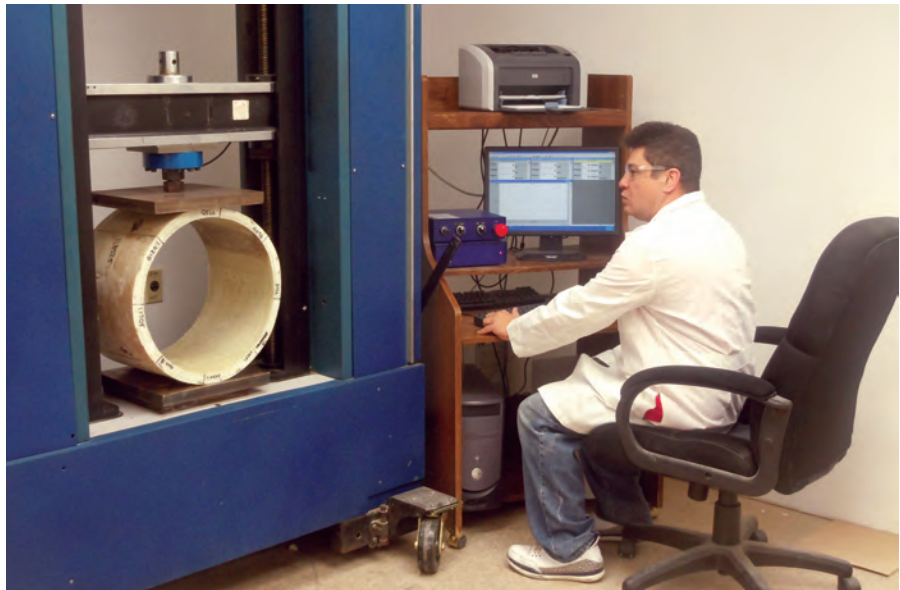
## TESTING NEW PRODUCTS

The exciting part for many people in the testing industry is the introduction of new materials and products. The evolution of resins, liners and coatings has called on labs to perform testing on these products. The third-party testing results on these products allows the manufacturer to introduce the product the industry.

Now we have the opportunity to work with another new product: felt/fiberglass liner. With the introduction of the fiberglass liner into the United States, it is critical for testing laboratories to understand the European specifications and testing methods. There is a dramatic difference in determining the liner thickness according to European specs. Like felt laminates, the thickness measurement determines the span of the test machine. This measurement is critical due in part because the span for flexural testing is determined by the thickness measurement.

**Rick Eastwood is vice president of business development for HTS Pipe Consultants, which is based in Houston.**

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