

November 24, 2010

Re: Testing of **Polylok's** pipe seal **P/N 3003-A-CE**

To Whom It May Concern:

This report documents the results of the testing performed on the **Poly III CE Closed End pipe seal**, on November 19, 2010, at the Polymold Laboratory in Wallingford, CT. The testing was witnessed and verified by Stonel Associates, Inc.

The testing was performed, in accordance to **ASTM C 1644- 06**, *Standard Specification for Resilient Connectors Between Reinforced Concrete On- Site Wastewater Tanks and Pipes*

The **Poly III CE pipe seal** was tested using two different pipes: one **4" Diameter Schedule 40 pipe** and one **3" diameter Schedule 40 pipe**.

The **Poly III CE pipe seal** was molded from Thermoplastic Rubber. It was cast, using 3,000 psi concrete, into a 3"x 9"x 9" specimen block that became part of a custom pressure vessel testing unit. The testing unit contained an instrument that accurately measures both hydrostatic infiltration and exfiltration pressures.

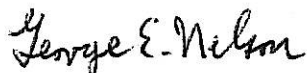
Each pipe was placed in the custom testing unit and inserted into the **Poly III CE pipe seal**. The pipe seal was then securely clamped to the pipe. Each pipe, while in an alignment position 90<sup>0</sup> from the testing unit, had the pipe seal tested using an infiltration and exfiltration pressure of 5 psi, taken at the centerline of the pipe's height, for a period of 5 minutes in each condition. Each pipe was then axially deflected at least seven degrees and again the pipe seal was subjected to an infiltration and exfiltration test pressure of 5 psi for a period of 5 minutes in each condition.

In addition the 4-inch diameter pipe was placed in a shear load of 200 pounds and the 3-inch diameter pipe was placed in a shear load of 150 pounds for both the straight and the axially deflected positions, in accordance with the requirements as detailed in **Section 7.3.3 of ASTM C 1644-06**. After each application of the constant load the pipe seal was subjected to infiltration and exfiltration testing of 5 psi, for a period of 5 minutes for each condition.

I can attest that throughout all of the above testing, there was absolutely no leaking and no indication of any sign of moisture.

Should you have any questions regarding this testing, please do not hesitate to contact my office.

Sincerely,



George E. Nelson  
President

November 24, 2010

Re: Testing of **Polylok's** pipe seal **P/N 3003-A-CE**

To Whom It May Concern:

This report documents the results of the testing performed on the **Poly III CE Closed End pipe seal**, on November 19, 2010, at the Polymold Laboratory in Wallingford, CT. The testing was witnessed and verified by Stonel Associates, Inc.

The testing was performed, in accordance to **ASTM C 923- 08**, *Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals*.

The **Poly III CE pipe seal** was tested using two different pipes: one 4" Diameter **Schedule 40 pipe** and one 3" diameter **Schedule 40 pipe**.

The **Poly III CE pipe seal** was molded from Thermoplastic Rubber. For testing, it was cast, using 3,000 psi concrete, into a 3"x 9"x 9" specimen block that became part of a custom pressure vessel testing unit. The testing unit contained an instrument that accurately measures hydrostatic pressure.

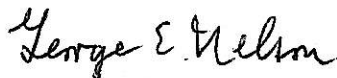
Each pipe was placed in the custom testing unit and inserted into the **Poly III CE pipe seal**. The pipe seal was then securely clamped to the pipe. To test the integrity of the pipe seal, each pipe, while in a straight position, was subjected to a hydrostatic pressure of 13 psi for a period of over 10 minutes. After the straight position test each pipe was then axially deflected at least seven degrees and subjected to a hydrostatic pressure of 10 psi for a period of over 10 minutes.

To further test the pipe seal, in accordance with the requirements as detailed in **Section 7.2.3 of ASTM C 923-08**, a shear load of 600 pounds was placed on the 4-inch diameter pipe and 450 pounds was placed on the 3-inch diameter pipe. These shear loads are common to both the straight pipes and the axially deflected pipes. After each application of the shear load the pipe seal was subjected to a hydrostatic pressure of 10 psi for a period of 10 minutes.

I can attest that throughout all of the above testing, there was absolutely no leaking and no indication of any sign of moisture.

Should you have any questions regarding this testing, please do not hesitate to contact my office.

Sincerely,



George E. Nelson  
President